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Quality improvement in primary health care

A practical guide

World Health Organization
Regional Office for the Eastern Mediterranean

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Foreword

Countries worldwide are beginning to introduce the concept of quality into their health care systems. This is because the provision of care *per se*, any care, is no longer the option. Patients and purchasers alike now demand that this care be provided with quality. The provision of mediocre care is no longer acceptable, nor is the provision of care without regard to optimum resource utilization. And certainly, care that is provided in a haphazard way is also not acceptable.

'Quality' simply means the achievement of the desired objectives in the most efficient and effective manner, with the emphasis on satisfying the customer or the consumer. It is not necessarily the most expensive way to do things. On the contrary, it is a call for efficiency and cost saving. It is not necessarily the provision of luxury items or services. It is a product or a service that is acceptable, accessible, efficient, effective and safe, and that is continuously evaluated and upgraded.

Quality is measurable. A system is usually made up of three components: input, process and output. Quality of input (structure) can be measured. This includes the quality of personnel, supplies, equipment and physical resources. The quality process is also measurable. Diagnostic, therapeutic and patient care procedures and protocols can all be measured and quantified. The same is true for system outcomes or results. They too are measurable. For example, infection rates, morbidity and mortality rates, as well as patient and employee satisfaction are all outcome measures and are all measurable variables. Therefore the system components of inputs, processes and outcomes have certain quality characteristics that are measurable and are important in quantifying the quality of a system.

It is important that primary health care personnel pursue the same core functions in relation to public health that other levels now do, especially those related to assurance of access to cost-effective, appropriate and quality health care. Primary health care is in the midst of a new era where ensuring

access to health care is not enough; ensuring access to *quality* health care is the goal now.

This manual introduces the concept of, and practical approaches to, implementing quality assurance and improvement in primary health care. The authors discuss methods and techniques for the promotion and sustainability of quality in health care. The manual outlines steps and techniques for implementing practical applications and procedures and it should serve as the most widely read and used manual in the field of quality in primary health care. It is unique to the field of primary health care for its rich and valuable material and its specificity to both the health sector and the Eastern Mediterranean Region. I commend the authors and the editors for a job very well done.

Hussein A. Gezairy, MD, FRCS
Regional Director for the Eastern Mediterranean

Preface

This book is devoted to the issue of quality and its application in primary health care. It is a collaborative effort between several international health care professionals, bringing the concept and practice of quality closer to the daily activities of health professionals. It is intended to be a practical reference for practitioners in the field and, as such, it is a comprehensive manual on the different applications of quality assurance and improvement in health care, in particular in primary health care.

Quality has a number of definitions, although in primary health care, the most applicable and certainly most important definition is “meeting the requirements of the customer, both internally and externally, for defect-free products and services”. Patients, of course, are one important group of external customers, and providers need to learn about, investigate, understand and implement methods to satisfy them, and to maintain these actions. Basically, quality is a process of effective communication between the supplier or the provider of care or health service and the consumer or the receiver of that care or service. It is a continuous process of dialogue and understanding between the two. There are other customers in the system also: the internal customers, the employees and other external customers such as patients’ families, visitors, payers, etc. Each has special needs and expectations and it is the duty of health professionals to meet them if a quality service is to be the goal in health care, whether private or public. Quality does not have to be the most expensive or the most prominent approach or product. It can be as simple as doing one’s job better, continuously. It can also be as simple as providing appropriate and necessary care to the right health care consumer in the most efficient manner, utilizing the current available resources.

This manual was developed in order to introduce the health care practitioner in the field to the concept, the teachings, the principles and the

applications of quality. It is a manual of practical tips and techniques geared towards the field practitioner and health care provider in primary health care.

The manual comprises 9 chapters. The first eight chapters discuss the principles, concepts and techniques of quality improvement and its many activities; the cycle of quality improvement and the development and assessment of standards in quality; the quantitative techniques utilized in quality improvement projects and the structural element of quality, in terms of both human and physical resources; planning for quality and techniques of setting objectives and forecasting for activities; the training functions necessary for the sustainability of quality improvement in health care organizations; monitoring and assessment, with examples from the USA of selective monitoring and surveying tools being utilized in primary health care; accreditation, certification, licensure including the processes of setting and monitoring standards, and surveying as a method to measure compliance to standards; and promotion and sustainability. Chapter nine describes important related areas that are not necessarily a part of the core activities of quality improvement but that are extremely important for an organization to implement to be more effective and more efficient in delivering its services. The annexes describe several quality initiatives that are current or have recently taken place in the Eastern Mediterranean Region.

Quality improvement efforts are being strongly pursued and supported by the countries of the Eastern Mediterranean Region. Application of the techniques and methods presented in this manual can help practitioners to improve the services and care they provide to their patients, and can improve regional primary health care. Both the individual countries and the Regional Office have actively participated in and sponsored efforts towards total quality improvement and we hope this manual will contribute to sustaining that momentum.

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Chapter 1

Introduction and background

A.F. Al-Assaf

Historical perspectives on health care quality

History has noted a considerable change in both the concept and application of quality in health care. The word “quality” has been perceived differently throughout history. During the Babylonian king Hammurabi’s time (about 2000 BC), quality meant that errors were out of the question. People making mistakes were to suffer the same consequence their mistake had had on others: “fracture for fracture, eye for eye, and tooth for tooth”, as the Bible later put it.

During the early seventh century, Islamic civilization began to flourish as the Prophet Muhammad ﷺ and his followers introduced new ideas and new ways of life. It was apparent throughout his teachings that “quality” was to be interpreted as “perfection”. His famous hadith “whoever does a job should do it perfectly”, denotes a perceived outcome of perfection in everyone’s job.

Other leaders throughout history have taken a similar approach, while still others have developed specific criteria for “quality”. Quality assurance as a science however, was never recognized until the mid-nineteenth century with the work of Florence Nightingale. A British nurse in the Crimean war, Nightingale introduced the idea of performance measurement and improvement of processes. She was instrumental in the decrease of mortality rate among wounded soldiers during one of the bloodiest wars of the time by simply introducing modern nursing practices to care for these soldiers. Her

success during the war led to her continued inquiry into the relationship between quality processes and outcomes. She completed studies that demonstrated this relationship and was also a strong advocate for structured approaches to improving outcomes.

In 1966 Dr Avedis Donabedian introduced a model of measuring quality based on “simple system theory” (Hall and Fagen, 1968). Any health care system can be described as a fully developed system with a set of objects and components. For health care quality, Donabedian described this system as having three components: structure, process and outcome. Structural elements are those related to resources, human and physical, such as patients, doctors, medical records, hospital building and drugs. The second component, process, refers to all those activities, procedures and tasks performed in that system. Examples of processes in health care include surgical operations, physical examinations and admission. The third component of a system is outcome. Outputs or results of processes are outcomes. Examples of outcomes are infection rate, patient satisfaction rate and morbidity rate.

Therefore, if we apply the Donabedian model of the health care system and look at the history of quality in health care we find that quality has evolved to move from one system component to another. During the early years (1850s–1910), quality focused on improving outcome. Thus the focus on outcome was prominent during the era of Florence Nightingale and others. As quality evolved further the emphasis shifted from outcome to structure. In 1910, Abraham Flexner, a physician in the United States, published an evaluation report on the status of medical education in the US and Canada. He criticized the way medicine was being taught and provided strong recommendations for medical schools in order to improve their education services. His report was later adopted by the US government as the standard for quality medical education, thus forcing a large number of so-called medical schools to close for lack of resources needed to comply with the new standards. This event paved the way for more activities intended to improve health care education and training of health care workers. Professional associations and licensing boards sprung up in different locations throughout the world in an effort to regulate the education and training of health care providers, thus improving the delivery of care to

patients. All of these efforts required the improvement of both physical and human resources or structural elements of the health care delivery system.

This era was followed by the creation in 1951 of the US Joint Commission on Accreditation of Hospitals, which in 1987 was renamed the Joint Commission on Accreditation of Healthcare Organizations. Thus, the concepts of accreditation and certification entered the quality equation while still focusing on structure elements and structure-related standards. This era continued to focus on human and physical resources. Professional organizations were established in order to guide their respective professions to quality. Standards and guidelines were developed by these organizations to monitor compliance and encourage health care professionals to follow. Other organizations shifted their emphasis to the development of standards and guidelines for health care institutions to pursue in order to be recognized as "quality" institutions. These institutions were given an incentive to meet these standards in order to acquire a certain professional status or meet a certain target. Whether it was certification or accreditation or licensure, health care institutions started actively to compete for these accolades or recognition certificates.

It was not until the 1970s that a shift of focus began from structure-related standards to process-related standards and guidelines. In the US, the government called on the private sector to develop peer review organizations in order to develop, disseminate and monitor process or care standards. Providers of health care were then "judged" on their compliance to certain explicit standards of care and practice parameters by their peers. Further monitoring was also performed in certain circumstances using implicit criteria (not written but based on peers' experience and judgement) and performed by closely related peer groups. This era of process-related quality activities continued well into the 1980s.

By the late 1980s, the health care sector was again looking for alternative ways to measure and develop quality. The trend started shifting from an emphasis on process-related standards back to outcomes. This trend was augmented by a strong movement of the industrial sectors towards a new theory, total quality management (TQM). The health care industry started experimenting with the introduction of the principles and philosophies of TQM into its institutions and organizations. With such

initiatives as continuous quality improvement, total quality improvement and performance improvement, the health care sector was ripe again for new quality measures and standards. A number of trends began to shape this sector. It was first a shift from quality assurance to improvement. Then, it was outcome management. And later it was clinical practice guidelines and performance measurements.

At the time of writing the emphasis on quality in health care whether in the US or elsewhere is still on performance improvement. Several initiatives have been pursued by health care organizations in order to meet consumer demands for comparative data. Report cards have been introduced as proxy measures of the status of quality of an institution. In these reports, an institution measures its performance against a number of well known and agreed-on measures (or indicators), and the results are published so that the consumer can compare this institution with ones similar to it. All of these activities have been accomplished in a spirit of competition for the now highly educated and well informed consumer.

Of course the trend of performance measurements has had a profound impact on the international health care community. In recent years, countries around the world have been discussing the issue of accreditation as a proxy measure of the quality of an institution. The question now is how to do that on a global basis with the backing and the support of the international community. Several organizations, including WHO, have taken this task as one of their priorities; WHO has organized a number of intercountry meetings in the Eastern Mediterranean and the South-East Asia regions. The discussions have revolved around the feasibility of implementing a quality system for the purpose of accreditation of regional health care institutions and the mechanism for such an initiative. This discussion continues, and a separate chapter of this manual has been devoted to the issue of accreditation and related activities, such as certification and licensure (see chapter 7).

Definitions and the concept of quality

Quality

Quality means different things to different people. There are different perspectives to quality in health care. From the provider’s perspective,

quality might mean providing the best possible care available to the patient. Quality from the perspective of the administrator is to provide effective care in a cost-conscious environment that may include the rationing of health care, especially when resources are limited. From the patient's perspective, on the other hand, quality is getting my care when and where I need it and from whomever I choose to cure my condition in the fastest possible way. Therefore, one quickly realizes that quality has different meanings for different health care players. So, what is quality? And how can we define it?

> Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skilful execution; it is the wise choice of many alternatives [anonymous].

From the above definition, we find that quality is something that must be striven for. It is not going to happen by itself. It must be planned, it must have strategies and action, and scientific methods must be used to apply it. It requires sophisticated learning and adequate training and must be conducted by skilled leaders through consensus building and teamwork. It will be achieved only if a process of effective selection is followed when choosing the right implementation strategy—decisions are made as informed decisions.

Another definition of quality is that it is achieved when an organization's processes and activities are designed and implemented in order to continuously meet the organization's customers' needs and expectations (Al-Assaf, 1996). Still, we need to stress the needs rather than the wants. As patients tend to want more than what they really need, prudent health care professionals must learn their patients' expectations through a good rapport. One effective way to achieve this is by periodically surveying patients. Surveys may provide valuable information on the needs and expectations of patients. Similarly surveys can be designed for other health care customers. Then it will be up to the providers to analyse the information obtained from these surveys and identify ways to meet expectations and needs.

In health care, another definition of quality may be just as applicable. Quality is doing the right thing right the first time and doing it better the next. Just think of the scenario where a patient comes to the clinic and is

seen by a physician. The physician's objective is to learn as much as possible about the patient's signs and symptoms and medical history in order to make the right diagnosis and thus render the right treatment. The physician strives to do all this on the first visit and hopes to keep up-to-date on the condition so that when another patient presents with the same condition he or she will receive better and more current care. This practice is exactly what this definition calls for, and exemplifies words of the Prophet Muhammad ﷺ: "whoever does a job should do it perfectly" (*hadith sahih*).

Quality assurance

Quality assurance (QA), as distinguished from quality improvement (QI) or quality management (QM), is the process and sub-processes of planning for quality, the development of objectives and goals for quality, setting standards of quality, communicating standards to users, developing indicators, setting thresholds and collecting data to monitor compliance with set standards (please see the glossary at the end for definition of all these terms). Therefore QA is associated with planning, setting and communicating standards and monitoring compliance. Hence variation from standards can be measured, and measures identified to minimize this variance. QA is associated with the standardization of health care. It supports the theory that by standardizing care, there will be less chance of error and therefore a better opportunity for controlling patient care outcome (Al-Assaf, 1994).

With a plan for quality, one will be able to allocate resources more efficiently, will be able to monitor progress more effectively and may be able to predict outcomes earlier. Additionally, by having a specific plan for quality one will be able to map his strategy more effectively and also be able to judge progress and evaluate achievements based on planned objectives. Another facet of QA is that it provides a venue for proper documentation and standardization of key processes thus controlling variation and better predicting outcomes. It also provides for the development of an ongoing monitoring system through which one is able to measure progress towards compliance and can select areas that need improvement. Therefore, QA is a necessary step towards quality improvement in the quality cycle.

Quality improvement

Quality improvement (QI) can be defined as the process and sub-processes of reducing variation of performance or variation from standards in order to achieve a better outcome for the organization's customers. The key issues here are the ability of this process to identify and act on variance. It is a process of enhancing processes to control outcomes. Activities must revolve around the customer as the driving force for any improvements.

There are a number of specific activities, skills, and tools that are necessary to accomplish QI. Therefore, adequate and appropriate training is paramount for its success and proper implementation. Several models and techniques for performing QI have been developed. Examples of such models are the FOCUS-PDCA model developed by Hospital Corporation of America, the world's largest health care management organization; the 10-step model of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO); and the TQI Cycle designed by the Quality Assurance Project of the US Agency for International Development (USAID), shown in Figure 1.1 (Nicholas et al., 1991; Blumenfeld, 1993).

Quality management

Quality management (QM) is a structural umbrella over all processes and activities related to QA and QI. QM is responsible for the coordination and facilitation of these activities in an organization. Specifically, QM is involved in the selection of health care quality personnel, the allocation of other resources, the monitoring and evaluation of plans and the launching of improvement teams.

Other terms used in the field include such terms as continuous QI, total QM, total QI, and leadership for total QM and QI, while the newest term on the market is PI, for performance improvement. Whatever term an organization chooses to use is irrelevant. The most important point is that health care quality can only be achieved if there is adequate preparation, understanding, and proper application of its principles in a health care organization, a region or a country. And there must be organization-wide involvement and adequate participation of employees in improvement efforts.

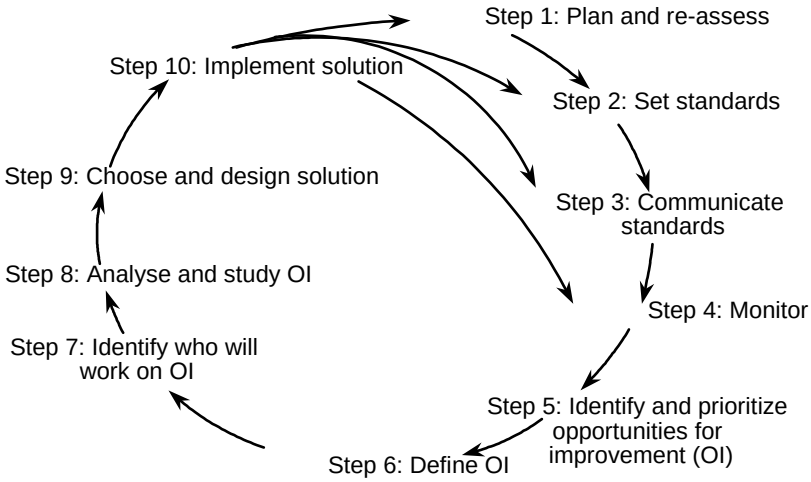

Figure 1.1. Quality management

Quality improvement steps

According to the USAID quality cycle shown above, the first three steps of the cycle—planning, setting standards, and communicating standards—are all quality assurance steps. Step four, monitoring, is also called quality control. The next six steps are quality improvement steps. Quality improvement, as mentioned above, is a process of reducing variation from a desired standard. Its aim is to achieve a low variation level in order for a process to stabilize and in order for the system to take control of the outcome.

Therefore, quality improvement is the process and sub-processes of identifying opportunities for improvement, selecting an opportunity for improvement, defining it from an operational standpoint and acting on it. This is usually accomplished through the formulation of interdisciplinary

teams with a common interest in the process for improvement. The team's responsibility will be to define its mission, its ground rules and its desired outcome. The team members should then divide the tasks and roles between them as they study and analyse the improvement opportunity. Data collection efforts should be planned and supported by the administration and the resulting information should be used effectively to reach the right solution or improvement decision of the process. Once a solution is selected, it should then be implemented, and re-measurement of the process under review should follow to document change. Once change is positively achieved the process is said to be improved; and a mechanism for continuous improvement may be adopted to ensure better outcomes.

The above model for quality improvement is by no means the only one. There are a number of similar model for improvement, most of which are equally applicable to primary health care and international settings. Readers are encouraged to research other models and identify one that is most suitable to their circumstances.

Dimensions of primary health care quality

The following are attributes and dimensions for health care quality in general which are equally applicable to primary health care. Data collected from several national and international surveys of consumers and providers of quality describe these dimensions as follows and in this sequence:

- effectiveness
- efficiency
- technical competence
- safety
- accessibility
- interpersonal relations
- continuity
- amenities.

Effectiveness and efficiency top the list, stressing that quality can be achieved only if processes are performed appropriately and in a cost-conscious environment (Binns, 1991; Jensen, 1991). Only appropriate and

necessary care should be provided. Waste and duplication should be eliminated. Only the most economical and most effective ways to provide care should be considered. In a system of higher demands for quality care coupled with the reality of limited resources, prudent decisions regarding best possible combinations of effective and efficient care are required and expected.

Providing effective care in an efficient manner requires high technical skills of health care professionals, who must do the right thing right the first time and do it better the next. In health care quality, providers and other health care professionals must be well trained in order to face the everyday challenges of meeting the needs and expectations of their customers, in particular their patients. Health care is a complex field, and without a good technical background the chance of professional survival is poor. Quality must be associated with high technical capabilities.

No one would accept providing or receiving care in an environment that was unsafe or perceived as unsafe. From a risk management standpoint it is the duty of health professionals to secure a safe environment for their patients. Accidents have consequences, all of which are negative. Unsafe conditions may lead to physical and emotional injury and legal liability, as well as loss of good will and reputation. Apart from that, an unsafe environment is counterproductive as people will spend their time answering complaints and defending lawsuits. Safety is an expected and a required dimension of quality and especially health care quality.

Accessible care is care that is available, acceptable, affordable. Accessibility includes physical, financial, and intellectual accessibility. The later even has a more important role in an environment where there is a multiplicity of cultures, beliefs and educational backgrounds, as is the case with the international health care community. Quality care needs to be offered to the “users” in their own setting and under their own conditions to be truly accessible. Therefore, good communication skills are essential in providing accessible care.

In a system that strives for quality, other dimensions must be considered. Personnel interaction is important for providing quality care. Health care is provided by highly educated and skilled individuals but these individuals cannot provide the full spectrum of care to a patient without

relying on teamwork. Interpersonal relationships therefore, play a tremendous role in shaping the processes of care and ensuring a positive outcome for the patient. Just think of a highly specialized hospital with all the gadgets of technology and the technical competence of its staff but without real care teams. Each provider is working on his own without regard to others in the system. No coordination of activities and no collaboration between providers. Probably total chaos! How would the care be delivered then? It would almost be impossible to deliver any care let alone quality care. Such an environment is not conducive to quality processes, and this hospital is doomed to failure. Effective teamwork is a must for health care quality.

Health care quality is a process not a programme. A programme has a beginning and an end but a process has no end. It is continuous. Another issue in regards to quality is that care should be provided in a continuum. That is to say care should be initiated, rendered, evaluated, improved and continuously monitored even after the patient is cured. Care is extended to include wellness, health promotion and disease prevention. Additionally, quality care that is started by one provider should be continued and followed by another provider in cases of transfer to ensure continuity of care. Fragmented care and disconnected systems are not quality systems, and health care quality may never be achieved in such systems.

Finally, it is always more pleasant to have care provided in an aesthetically acceptable environment. A facility that pays attention to the minute details of its customers' comfort and well-being is a quality facility. Whether it is cleanliness, decor or service, health care quality can only be enhanced with such a valuable dimension.

New quality dimensions have recently been introduced in the US by the prestigious Institute of Medicine group (a research think tank for the US Congress) in their 2001 report (IOM, 2001). These are safety, timeliness, equity, effectiveness, efficiency, and patient centeredness (*STEEEP* is an easy mnemonic).

Quality and cost

Increasing costs may not result in increased quality, and increasing quality may not necessarily result in increased costs. As we implement quality-related activities such as assurance, improvement and review, we will at the beginning incur added cost. However, once these activities are well integrated into a system and organizations become more aware of what is required to achieve quality then all of the activities related to preparation and appraisal will be unnecessary, and their cost will eventually diminish. Similarly all of the costs associated with poor quality activities, such as waste and duplication, will diminish. Thus the total cost should be less once quality efforts are part of the daily routine. Therefore in such a phase, quality will be inversely related to cost. As quality increases, cost decreases in the long term. Quality then becomes inexpensive and is easily afforded and sustained.

One of the major principles of quality is efficiency. According to Suver et al. (1992), the costs of quality are three: the costs of prevention, appraisal and failure (both internal and external). Implementing quality in a health care system requires certain resources in order to provide training in quality methodologies, to secure monitoring capabilities, to measure performance and improvement accomplishments and to collect the data necessary for documentation of the status and level of care. Quality reduces the costs incurred by a system by gradually reducing costs associated with failure. Internal failure costs such as those of duplication and waste can be reduced and eventually eliminated if resources are used wisely and processes are streamlined effectively. It is also the objective of quality to eliminate errors and mistakes in providing care and service that may have a detrimental effect on the customer, primarily the patient. Thus by doing so, external failure costs that are usually the most costly (sometimes tied to malpractice and liability issues) can be further reduced and may eventually be eliminated.

Quality can be measured

Quality is tangible and is measurable. Just think for a moment that health care is a system. Therefore, according to the simple system theory as it was applied to health care by Donabedian (1966), each health care system can be divided into three components: structure (human and physical resources), process (the procedures and activities of care and services) and outcome (the results of care and services). Each of these components has a number of quantifiable elements that can be accurately defined and measured. For example, under structure, one might look at the quality of physicians in terms of their training, experience and education as one attribute of the total quality of the system of health care in which they work. In the process component, one may calculate the variation in current procedures performed compared to a standard set of steps for the same procedure as another attribute of the total quality of that health care system. For outcome, one might calculate the level of patient satisfaction of the care provided in a health care setting as a proxy measure of the total quality of that system. If one could define and identify all of the major elements of any health care system then one can certainly develop quality standards for these elements. Measuring the compliance of these system elements to the quality standards developed, one will be able to measure the quality of the system as a whole based on the extent of compliance of these elements to the desired standards.

Measuring quality can also be achieved through the development of key indicators in order to measure the current performance of a system's components (structure, process and outcome) and compare them to the desired standards to be achieved. If these components turn out to be in compliance with the desired standards then the system is deemed compliant and therefore will be considered a quality system.

Several methods have been developed to measure quality in this manner. Accreditation, certification and surveys are methods for measuring quality of a system or an organization. These methods will be discussed in later chapters.

Key success factors in quality improvement

The following is a short list of principles that should be met in order for a system to achieve quality status. Each of these principles is considered a key success factor towards quality improvement.

Leadership

The ability of the leaders of an organization to assume the role of true leaders with all of the skills associated with leadership is vital. Vision, compassion for the cause, listening skills, people skills, communication skills, empathy, charisma, persuasion, participatory management style and the like are necessary for a leader to be an effective one. Without true leadership in quality improvement, success may not be attained and maintained.

Commitment

Active and participatory commitment is required. Leaders must show not only verbal commitment but also active and practical commitment. Leaders should get involved in the decision-making aspect of quality improvement. They should participate in quality committees and councils. They should be involved in launching teams and provide the necessary support for these teams to succeed.

Customer focus

According to Kristen Anderson (1991), without customers, we may have to close our doors. Customers are the reason for our existence as providers. They provide the purpose for our structure. One of the main goals of quality improvement is to meet the needs and expectations of the customers, both internal and external. Therefore, for a quality improvement programme to succeed it has to carefully identify its customers and learn their needs and expectations, and must find ways to meet them. Otherwise, quality improvement will have little or no impact on what matter the most.

Continuous process-oriented and outcome-driven improvements

Improvements must be continuous. They must be directed at processes but should be driven by the goal of achieving the right outcome. Outcome

goals should be chosen based on customer impact and organizational priorities. Without a well developed plan for action taking into consideration these issues, quality improvement efforts may not succeed.

Employee empowerment

Each employee should be treated as a customer. They should be trained and continuously developed to render the best possible service to the external clients. They should be given the tools and the techniques to make decisions on their own and should be supported in their efforts of meeting the needs and expectations of their customers. A quality improvement effort that does not consider the needs and assets of the employees is doomed to failure.

Proactive improvements

Taking a proactive approach to problem-solving and to identifying opportunities for improvement is key to success. Organizations should stay away from traditional “crisis management” where improvement is initiated only after a crisis ort a mistake occurs. This situation will create a sense of laziness and inability to innovate.

Data-driven decision-making

Use of data is paramount in quality improvement efforts. A system of data management should be fostered in order to adequately and correctly manipulate data and produce information necessary for appropriate decision making activities. Quality improvement is based on decision-making activities and without the necessary data these decisions become arbitrary and may not be correct.

Interdisciplinary team-work

If all employees work on their own without interaction with one another then the organization may never see the fruits of the synergistic effects teamwork can bring. One member of the team may bring one perspective and another may build on that perspective to bring about a better perspective, and so on. Therefore working in teams is not only to achieve

collective decision-making capabilities but to achieve progressive and compounded capabilities through the participation of all the team members.

Education, retraining and recognition

Continuous development of the human resource of the organization is one of the requirements for a healthy and improving organization. Almost all experts agree that investing in your employees is highly predictive for ultimate success. Additionally, an organization that has its employees satisfied has a perfect environment for improvement and breakthroughs. When morale is high, productivity is at its best.

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Chapter 2

Development of standards and the quality improvement cycle

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Quality improvement cycle

Quality improvement is a systematic and continuous exercise of identifying problems in medical care delivery, designing activities to overcome the problems and carrying out follow-up steps in order to ensure that no new problems have been introduced and that corrective actions have been effective. Achievable desired inputs, processes and outcomes depend on the combination of services. It makes a difference if these services are organized by the health system in a given situation, in a country or region of a country, with regard to health physical structures, socioeconomic conditions of clients, skills of health workers, management and support systems, mechanisms to pay providers, etc.

To address this complex process more systematically, problem-solving concepts such as the quality improvement cycle are used to reach concrete results, and to objectively plan a solution for each identified problem in a system. The major components of the cycle include: the definition of priority features of the system; formulation of standards for these; measuring performance; defining priority problems; analysing their causative factors and identifying remedial measures; suggesting and implementing relevant actions; and reassessing performance. This approach will provide an

opportunity to promote a culture of quality that generates a process of continuous improvement.

To ensure the resolution of quality problems, responsibilities are to be assigned to health workers and/or to management teams operating at the different levels of primary health care. A brief description of the different steps of the quality improvement cycle is given below.

Identifying the steps of the quality improvement cycle

Definition of quality features

The first step in the quality improvement cycle is to plan for and define quality features that are critical to the different dimensions of service delivery i.e. service performance, management or users/community. At the early stage of primary health care quality implementation it is desirable to select a package of quality features to avoid the development of unlimited numbers of standards, which may discourage their voluntary use by the different primary health care teams. These selected quality features need to reflect the priority community health problems and the primary health care needs.

Standards for the most critical features

The next step of the quality improvement cycle is the setting of standards. In this exercise the modality of measuring each selected quality feature is assessed. Once defined, this improvement is translated into standards that define the level of performance to be achieved according to this measure. For example, an antenatal visit may be considered a critical feature as it may affect both maternal and infant survival. A measure of this feature (an indicator) could be the number of antenatal visits carried out by a trained health worker. The desired level of standard (the threshold) may then be set as the performance of a minimum of three or four antenatal visits during each pregnancy. Table 2.1 provides some examples that illustrate the process of formulating standards in quality improvement in primary health care.

Table 2.1. Examples of formulating standards in quality improvement in primary health care

Critical feature	Measurement	Threshold
Midwives working in a health centre	Number of locally resident midwives operating in the health centre	At least one midwife per health centre
Antenatal visits	Number of antenatal visits per expectant mother	At least four antenatal visits per month
Vaccination of 12 to 23 months old children	Completing all vaccinations recommended by EPI	Over 95% are fully vaccinated children
Visual problems in school-age children	Assessing visual acuity with the use of a simple chart	Visual acuity of 90% of children are assessed on school entrance
Mortality from severe diarrhoea in under-5s	Number of deaths in under-5s suffering from severe diarrhoea	Fatality rate less than 5%
Maternal and prenatal mortality in malaria-endemic areas	Blood smear during prenatal visits	80% of pregnant women residing in endemic areas perform laboratory examination of blood smear according to local protocols

Measurement of performance

Once the standards have been set, it is possible to measure performance in relation to each standard. In this regard, the health staff collects and records performance against standards using the chosen measures. To assess the level of performance, a representative sample of activities is selected and data related to their performance collected. The information to be collected has to be comprehensive and cover the following scope:

- client problem-solving aspects, i.e. examination, investigation diagnosis and case management procedures or referral
- screening for unsuspected or latent conditions for which early intervention may provide a better outcome
- the provision of health promotion and prevention services

- the follow-up and monitoring of patients with chronic or recurrent health conditions with the objective to improve their outcomes.

Analysing and comparing performance with standards

The collected data are then analysed in order to evaluate the care actually delivered and compared against the set standards. These are presented in charts that illustrate the variation in performance for each feature specified and measured. This makes the health worker aware of the satisfactory aspects of performance and the shortcomings in primary health care service delivery. Any discrepancy between a performance and a standard (the gap) poses a problem for which the necessary changes and corrective measures are to be defined and choices of possible action evaluated.

Action to improve care

The goal of quality improvement is to undertake interventions that improve the performance and impact of primary health care services. If no deficiencies are detected, congratulatory feedback will constitute an incentive that will further raise staff awareness and stimulate their commitment to the quality improvement process.

In the case of deficiencies, the necessary corrective interventions should be implemented. Such interventions may be simple or more complex, thus requiring a problem analysis process.

Reassessment and maintenance of quality

The purpose of the reassessment process is to ensure that quality improvement methods are put into practice and maintained. Outstanding deficiencies are evaluated, and necessary remedial measures identified and implemented.

The use of standards in the quality improvement cycle is an effective way to initiate and drive organizational changes in a never-ending chain of continuous improvement. In this process the emphasis should be laid on the organizational and attitudinal changes necessary to support quality, in addition to the standards that guide quality improvement. Through this approach a process of continuously improving quality is set in motion.

The identification and selection of improvement opportunities

Careful identification and selection of quality features is the first step in the quality improvement process. When first introducing quality improvement methods into primary health care, it is important to identify priority programme activities and the corresponding most serious quality problems that impede their successful implementation. The range of selected features and standards should encompass inputs, processes of care and outcomes. As different primary health care stakeholders—clients, providers, planners and policy-makers—have different perspectives as to what is important, in addition to technical matters, other issues such as equity of access, more value for money and user satisfaction are also to be considered.

In order to carry out a systematic problem-solving and correction of quality, it is important to consider the following:

- selecting priority health problems that constrain effective delivery of essential interventions
- defining underlying causes, such as low coverage, the quality of the activity being inadequate, insufficient allocation of resources and/or inadequate system organization and management
- identifying most critical causative factors that inhibit the attainment of the desired outcomes
- collecting information about how to eliminate the identified critical inhibiting factors through, for example, improvement of the health care environment, human resources training, improvement of the management and organization process, improvement of the coverage and quality of performance and/or addressing the community dimension of quality using the participatory approach
- suggesting and implementing the necessary changes and monitoring their relevance in removing the outlined causes
- follow-up and reassessment to define outstanding and/or emerging difficulties/problems and take the necessary action to resolve them.

Among the priority and critical health problems are high infant and maternal mortality rates. The analysis and definition of the causative factors must comprehensively address all the care relevant to an infant's survival—antenatal, natal and postnatal care—in order to assess the quality of the

perspective of all of the health care received or not received and the health care and social environment. The use of quality standards will help in defining those conditions and practices that do not comply with the set quality measures of quality.

Analysing the improvement opportunities

As we seek to define and select priority quality features in primary health care, we soon become aware that the possible improvement opportunities depend on where we are located in the system of care as well as the nature and extent of our responsibilities. Based on this understanding, the prospected improvement opportunities are four-fold.

Improving technical performance

Technical performance depends on the knowledge and judgement used in setting professional quality improvement strategies of care and on the skill in implementing those strategies. The attainment of quality standards in the performance process is believed to produce the desired outcomes in health care, and hence the opportunity to achieve the level of health status that current health technology has made possible. To realize this goal, staff should take part in the process to understand how these methods help them to improve quality.

Improving management

The quality of care depends on good management of the resources provisioned to the primary health care system. Quality management should render the programme activities safer, and should have an impact on mortality, morbidity, disability, malnutrition and population dynamics. Relevant activities to this process include:

- integration of primary health care activities at the operational level, as this will render the programme more cost-effective, which by itself constitutes an important variable of quality
- distribution of the different categories of health worker to well defined catchment areas, and ensuring their capacity to fully comply with their assigned responsibilities and delivery of quality care

- availability of referral mechanisms for each level of care, as this will ensure that all individuals receive essential quality care irrespective of their place of residence
- distribution of supplies, including essential drugs and vaccines, the supply of X-ray and laboratory equipment, provision of reagents and other consumables and the maintenance of these equipment
- rehabilitation and maintenance of health facilities
- coverage and rational resource allocation, ensuring that services are available to all those who need them and properly executed and that resources are not diverted by technologies that are not relevant to priority health problems or not more effective than less costly technologies.

Improving the community's role in primary health care

Quality improvement in primary health care offers an opportunity to examine the care required by the community as a whole, as using quality standards will enable us to focus on those who have less access to quality care, but also, in a broader dimension, to examine the community's involvement in the health care programme. To contribute to this process of transformation of attitudes and behaviour, it is necessary to build an acceptable level of interpersonal relationship between health care staff and the community, as this constitutes the vehicle by which technical care is implemented and on which its success depends. Through it, users provide information relevant for arriving at diagnosis, for selecting the appropriate method of care, and for facilitating patients' active collaboration.

Individual users and members of their families and the community in general contribute to primary health care through their direct involvement in service delivery. It is important to realize, however, that introduced service standards are not disproportionately costly compared with the improvements in health that they produce.

Selecting and implementing strategies for improvement

Quality improvement in primary health care is not limited to the interaction between health workers and their clients. It is about the proper management of the health care services system, cultural values and the

integrated approach to providing access to essential care. Measures to improve the quality of primary care can reduce the degree of referral of patients to more expensive secondary and tertiary care. In launching the quality improvement approach to primary health care, several strategic options are necessary.

Defining responsibilities

Prior to the launching of a quality improvement programme the persons responsible for the performance of the different components of the programme and its service delivery units need to be defined. This entails the preparation of simple but clear job descriptions that illustrate the scope of different health workers with regard to selected quality features of primary health care.

Gradual course of implementation

When introducing quality improvement measures the gradual phased approach is recommended to maintain staff commitment and skill development. A few quality features are selected for which a limited number of standards are developed. Through the use of quality improvement cycle, the staff will evolve their problem-solving capacity. By providing the benefits of their corrective interventions through the quality improvement process the staff will gain confidence in extending the scope of the primary health care quality dimension. It is a waste of resources to introduce a detailed quality improvement programme, if health workers and managers cannot understand or cope with the system.

Reorienting health workers on quality

In addition to training of health workers on quality improvement methods, it is equally important to introduce the necessary changes to the organizational structure and to the culture of the service. This is facilitated through the development of teamwork and positive relationships between health teams as well as between health workers and their clients/communities.

Dissemination and implementation of quality standards

The health sector and professional community should establish the necessary communication network for providing health workers at all levels of care unlimited access to these standards. National and provincial/regional bodies that are responsible for development and implementation of quality standards should coordinate dissemination.

In order to introduce effective and successful quality programmes for primary health care services, an essential prerequisite is to clearly disseminate the objectives of the programmes, the activities set for achieving these and the managerial support and community involvement required, inputs, and processes that lead comprehensively to the desired outcomes of the programmes. An understanding of primary health care strategy is the driving force that motivates the different stakeholders to invest in the system, identify priorities and recognize the significance of primary health care services as a means to improve the health status of the target population through the attainment of set desired outcomes.

Standards

There is a growing need to improve the quality of primary health care services and technologies offered in the field of promotion, prevention, diagnosis, treatment and rehabilitation, and execute them in a proper and safe manner to ensure that the expected impact is attained.

Background, concept and methods of setting standards

Background and concept

Since the Alma-Ata declaration on primary health care in 1978, there has been a growing trend worldwide to increasing the coverage of health care services, and a considerable amount of resources have been directed towards the establishment of health care facilities and the development of human resources for health. These health development activities have been mostly carried out through the implementation of primary health care programmes in order to overcome the serious deficiencies in the distribution of health resources and improve the availability and accessibility of essential

health care services to the people. The ultimate objective of all of these initiatives is to improve the health status indicators. This has enabled many countries to create a health care system that serves the basic needs of the population.

In order to ensure that maximum benefits are achieved from these health interventions, the quality and effectiveness of health care needs to improve. Moreover, this need is made clearer by the rising costs of health care and by the increasing demand for better health care by the people. Thus, from the quantity of health care activities and the concentration of each type of activity, interest has shifted to the way in which these activities are carried out and their relevance to the needs of the target population. This is in addition to the effectiveness of these services in modifying the health status of the population. It is this emphasis in quality that has necessitated the formalization of standards, as these define the meaning of quality as it relates to health care delivery.

Setting standards is a major and early step in the quality improvement process. These standards constitute a real yardstick by which health workers measure how they are doing. It is expected that the set standard will lead to more effective health service delivery and therefore better outcome. They enhance cost–effectiveness and improve the health care planning process. Professional standards protect clients from the adverse effects of a poor health care environment and from inadequate service delivery in professional practice. The relevance of structural standards is derived from the assumption that primary health care workers cannot work optimally if not appropriately organized, or use faulty equipment and unhygienic practices or work without adequate precautions to protect physical safety.

Methods of setting standards

The methods for setting standards should have a broad scope and include clinical services and management and support services, with the clear objective of improving the overall performance of the health care organization. These methods should also address the community and allow the evaluation of their perceptions and experiences—whether obtaining the desired access, regularity of service delivery, quality of care and improvement in health status. Setting standards for all the components of

health care and in particular for the different levels of care of a district health system based on primary health care is therefore the lynchpin of quality improvement.

A logical methodology for setting standards is pursued by ensuring the broad-based involvement of all levels of the health care system, both public and private, and with representation from consumers. Standards are established through an extensive consultation process and periodically reviewed to ensure their appropriateness and relevance. These standards need to cover the broad spectrum of departments and services found in health facilities and to be extended to those primary health care service packages delivered at the community and household levels.

The starting point is to define the quality of particular services as a set of quality standards. This defines the key features of quality in three dimensions—client, professional and management. A standard should be scientifically valid, feasible in practice and appropriate to the level of care or service. Standards should include only essential items and be kept up-to-date. They should be simply expressed, and their number should be kept as small as possible. They should answer the following questions: what effective care should be given to the patient/client and what should be achieved for the patient/client. A good standard is relevant/critical to the desired outcome and consistent with societal, professional and individual values. Standards should be measurable, feasible, specific, objective and easy to understand, and dynamic rather than static, providing the opportunity to be revised continuously to reflect the demands of the health care system and the needs of users.

Evidence-based decision-making in primary health care and standardization

Standardizing primary health care service delivery is an essential strategy for ensuring the quality of care, increasing the effectiveness of intervention and case management programmes, and reducing the cost of care. These guidelines refer to protocols that set standards for the diagnosis of common health problems and for the case management decision-making process. These standards clearly outline the opportunities and limitations of the different categories of health workers and level of care and the optimal

timing of referral. Examples for common primary health care guidelines include those set for:

- control of diarrhoeal diseases and acute respiratory infections in young children
- children's immunization schedules
- supervision of first-line health workers,
- screening for antenatal care
- diagnosis and treatment of tuberculosis, malaria and other common endemic diseases
- breastfeeding and supplementary feeding of young infants.

The main objective for setting these standard guidelines is to ensure the practice of evidence-based decision-making in primary health care settings. This strategy is extremely relevant as it enables different health teams and facilities to perform specific primary health care tasks following pre-set standard guidelines that allow objective monitoring and evaluation of the performance level and hence the quality of their service delivery. This will also minimize variations in primary health care service between similar facilities and health workers, thus ensuring the expected outcomes of these interventions, and minimizing the incidence of inappropriate outcomes. These standards serve also as a checklist for the health worker in order to preserve the critical elements of appropriate care.

Introducing standard guidelines into primary health care has enabled the system to assign lifesaving tasks to first-line health workers, which has led to significant improvement in coverage and quality of care in primary health care throughout the world. This has also reduced the cost of inappropriate care. Standards of care are often set for common critical conditions for which patient variation is small, with sufficient evidence-based knowledge and technology and for which standard training and uniform support inputs can be made available. These standards of care are the yardstick against which health workers' performance is assessed and its quality judged.

Accepted standard guidelines are based on scientific evidence and supported by sufficient research information. They clearly state the conditions towards which the standard care is being guided and the target

population to which these guidelines apply. They also indicate the desired clinical outcome and the measures that verify the attainment of this outcome as well as the non-attainment of these and the standard decision pathway to follow on such occasions. Standard guidelines relate also to health promotion and disease prevention strategies.

Definition and types of standard

Definition

There are several definitions for the term "standard" set by different scientists in the field of quality improvement. The most significant of these definitions are as follows. A standard is:

- the level of performance that is considered acceptable by one having authority in the situation or by those instrumental in maintaining such performance levels or conditions
- a professionally developed expression of a range of acceptable variation from a norm or criterion serving as basis for comparison. A description of how an activity should be performed
- a benchmark or model against which the degree of excellence or acceptability of an observed performance or structure may be appraised
- statements of the expected and accepted levels of performance that are made available prospectively to health care organizations through a formal mechanism for assessment of the organizational compliance.

Based on this understanding, standards can be set at a range of levels depending on the level of quality that one wishes to attain or use as a benchmark for performance assessment or comparison. The standards can be any desired achievable value. They are at times specified as a sample value or as a certain degree of tolerance indicating a threshold below which the performance or outcome level is unacceptable; and when this level is crossed a corrective intervention is required.

Standards are measured in nominal form, where the selected criterion or parameter (a measurable characteristic) is either present or absent. For primary health care services, it would be possible to set these standards as

percentages for which the acceptable level of performance or outcome is attained or not attained, when the care is given as per the set standard. In other standards, variables are measured with numerical scales. For these scales, the required level of inputs, performance or outcomes are identified.

When setting standards one has to consider the variables to be measured and how what is good or desired will be judged.

There are processes or outcomes where the more we have, the better; for example, survival, immunization coverage, children with diarrhoea provided with oral rehydration therapy, health education sessions and antenatal visits. In other standards, the less we have the better, such as rates of morbidity, mortality and disability, adverse outcomes and acute infections or conditions. The standards that pertain to these two phenomena may be forced into two polar positions on a continuum of 0 to 100 per cent.

Other phenomena in primary health care may have a normative structure, where the standard lies within a bounded range. The most desirable value is set at some maximum or minimum point. Such standards include weight-for-age ratio of young children, blood pressure and respiration rate.

In monotonic standards, only one threshold is needed either below or above the target standard depending on the best possible or desired value.

Types of standard

In primary health care quality improvement programmes the effort of standard setting should be concentrated on a limited range of outcomes for priority health features in order to ensure that the system is able to respond to the deficiencies found in the quality of care. Table 2.2 provides an example of each component of a system and their respective elements: structure, process and outcome.

Structural standards

These apply to things we use and refer to the quantitative and qualitative adequacy of the inputs/resources (material and human), such as number, qualifications and experiences of health providers at all levels of a health care system, and the adequacy of their ratio to the catchment area

Table 2.2. An example of healthcare system components and their elements

Structure	Process	Outcome
Health care environment and resources Environment in which the care is provided Human Financial Physical resources Physical safety of facilities Functionality and reliability of equipment Organizational structures of the system	*Activities* Appropriateness of tests or drugs ordered by a health worker Use of antibiotics in ARI and other common childhood diseases Interpersonal aspects of care Method of giving an intra-dermal injection Reporting Family planning and EPI Documentation of patient care and related clinical, promotion and preventive information Retrieval of data for management information Documentation of patient care and related clinical, promotion or preventive information Retrieval of data for management information Policies and plan of service delivery Waiting time Human relationship Management Good communication with the community/clients and other sectors Integration of primary health care activities Diagnosis Treatment Referral Cost application infrastructures Surgical procedures Pap smears for cervical cancer	*Results and action* Reduction in fatality Reduction in blood pressure Physical function capacity Mental health status Patient satisfaction Health status Clients perception Adverse effects or complications

population. Other examples include the balance between different types of resource: hospital beds and operating rooms, hospital and first-level care facilities, beds and services and the health workers required for each service.

The design and special allocation of health facilities and the supplies and equipment in different areas of hospitals, health centres and other levels of care are other examples.

Structural standards refer also to the way in which the available resources of primary health care structures are organized and managed, as these determine the ability of these facilities to deliver quality care or services. They imply the existence of relevant policies, rules and regulations, job descriptions and procedural manuals that guide the work of different units of each of the primary health care service delivery levels.

Process standards

Process standards apply to what we do in terms of activities that constitute care, service or management. Examples of process indicators include specifications of services that are to be provided during the antenatal period, practice protocols and guidelines for the management of diarrhoea and acute respiratory infections in children under 5 years of age. Other examples are specifications of the vital signs that should be monitored and documented on admission to and discharge from the hospital/health centre casualty or emergency unit, specifying the principles of asepsis for patients who receive surgical and anaesthetic care.

Process standards often describe the appropriate and standardized course of action for specific conditions with the objective of minimizing variation in health management support and clinical practice and consequently improve performance and efficiency of health care.

The setting of these and other standards requires a great deal of consensus-building to achieve, and to interpret appropriately and ensure the compatibility between them and the contribution they make to the overall evaluation of health care. These standards are developed and maintained based on collective judgement. In developing these standards the major determinants of the managerial, organizational and professional standards are the professional groups involved in the management and delivery of these services in the primary health care system.

Since primary health care is primarily a public good, the government sector has to play a vital role in setting and maintaining standards for the various levels of the health care system. Governments also administer the

national system for the delivery of health care. Governments may determine the national standards for a district health system based on primary health care in terms of the services to be delivered and quality of care to be made available to the population, range of services, equity of what is available and their acceptability to the target population.

Outcome standards

Outcome measures of quality assess health status directly and allow changes in health to be documented directly. They denote the effects of care and service on the health status of clients, such as improvement in community knowledge and positive changes in behaviour as well as their satisfaction with care. Outcome standards can be either specific concepts, such as mortality, symptom level and functional status, or overall health status using an index that combines a range of outcomes based on mortality indicators, morbidity indicators or a combination of these. When the disease-specific or health problem–specific approach is taken in developing outcome standards, they may take into account mortality, morbidity, disability and reduction in life expectancy or work loss. They may be made even more comprehensive by including other outcome variables, such as symptom level and satisfaction.

Development of standards

The development of good standards requires the active participation of professional groups in the health system and in the community. Consultation is carried out with the professional bodies that may be affected by the standardization process. This may be written as detailed statements that constitute standards in their own right or in a general form with specific criteria to assess the extent of compliance.

Standards need to be developed for all elements of primary health care and for each level of care. For similar activities, similar standards are set, irrespective of the level of care they are delivering. In addition, quality standards refer to the health care environment, its activities and technical, managerial and community-related aspects of the programme. Quality standards are also set for the equity of service delivery—are health services distributed and provided in an equitable manner and in accordance to the

needs of individuals, families and communities? Another dimension of this requirement is to ensure that quality standards are equally maintained in different districts and in rural and urban settings. This will imply the implementation of quality improvement standards in all health care units of all categories with a focus on the district health system.

In developing the different sets of standards the following approaches may be considered.

Setting an organizational base

A quality assurance committee is established at national level whose members have expertise in each of the areas of primary health care. The team must reach a consensus on the standards to be set. The ministry of health forms a working group made up of a range of people working in primary health care from different professional backgrounds to examine the existing system of quality assurance. The group will during their consultation call for outside experts from both the public and private sectors to provide their contributions.

Considering relevant attributes for standard setting

To ensure that the most appropriate standards are selected, the following steps may be considered:

- systematic review of the scientific evidence
- the standards set
  - must focus on the quality of primary health care services and the environment in which they are delivered; and they must be achievable, measurable and up-to-date
  - must be easy to implement and there must be practical ways to demonstrate compliance
  - must be easily monitored and evaluated
  - must be easily developed, disseminated and implemented
- the required communication and managerial skills and leadership must be developed or in place
- there is strong consensus between the parties involved on the standards set.

Setting the standards' specific values—the threshold

Once the indicators that illustrate quality of primary health care are selected, it is necessary to choose a specific value of that indicator and this will constitute a standard. A threshold or a norm is defined as a statement describing present levels of attainment for a given standard. For example, if at present the infant mortality rate is 86 per 1000 live births, this figure will constitute the current norm in that country but that does not mean it is the desired level of achievement. These tools help in deciding whether there are problems with the quality of care.

If an indicator of primary health care quality performance is the full immunization of infants, a threshold for the quality of immunization services might be that at least 85% of the target population in a given catchment area should be fully immunized.

As setting of standards involves an exact description of the aspects of the selected activity or resources, it will subsequently lead to the establishment of a detailed description of procedures for diagnosis, treatment and follow-up. Standards should have a scientific basis and be relevant to the region where they are applied, be realistically implementable, be applicable to the specific situation of health promotion, disease prevention or care and be flexible enough to be changed when and if necessary.

Adaptation and implementation

Once developed, the standards are tested and adapted to the different educational levels of health workers and the cultures within a country. The tools are then compiled in one or more manuals for training for monitoring and assessment of the levels of quality performance. The set standards are then tested in pilot sites to assess their relevance and validity and ensure that the staff for which the standards are intended can be actively influenced and are able to use them at the operational level. To facilitate understanding and compliance, standards need to be written in the form of detailed statements that constitute standards in their own right or in a general form with specific criteria to assess the extent of compliance.

The adaptation process may use generic internationally or regionally set quality standards. The revision of these would require fewer resources and generate fewer errors than a system where primary health care standards

were developed from scratch at the country level. The adaptation process would also allow the local features of the health services system to be considered and preserved. National bodies that accept responsibility for the development of these quality standards should coordinate this process.

Monitoring and supervision

The implementation of these standards is then monitored and supervised at the local level by different categories of health worker—medical doctors, public health nurses and midwives, primary health care managers, and so on, and representatives from the different primary health care professional backgrounds and community (consumer) groups.

The outcome from this extensive national or regional exercise is the production of standards that describe the good practice of primary health care, and these are then used as measures for the system's organization, performance and outcomes. To be effective, primary health care standards demand integrated information systems and a change in the behaviour of health care workers. They may also require change in policies, procedures and systems to support their implementation. Significant efforts are then made to educate staff to comply with them.

Assessment of standards

Assessment of quality standards is a judgement on the process of care provided by health workers. As the main purpose of this exercise is to promote the improvement of primary health care, health workers involved in the programme should participate in the assessment in order to raise their understanding of the factors that contribute to quality of care and identify points of weakness that call for strengthening. The assessment process should be comprehensive and focus on all three types of standard as follows.

Assessment of structural standards

Structural measurements are concerned with the characteristics of the setting in which primary health care occurs. They are of considerable importance in primary health care system design as they increase the likelihood of good process, which in turn increases the likelihood of a good outcome. The assessment of this set of standards is a judgement whether or

not primary health care is being provided under conditions that are conducive to the provision of good care. This includes the assessment of space and other physical facilities, number and qualification of health personnel operating in these facilities, staff availability, the manner in which they are organized and managed, financial resource allocations, organizational structure, and applied methods of monitoring, supervision and evaluation. They also include the attributes of equipment and whether standard case management and other educational materials are posted in the right locations.

Assessment of process standards

In assessing process standards, it is imperative to use only those that have a direct relationship with the desired outcome. These attributes characterize the activities that are actually carried out by the different categories of health workers and provided to their clients. These include the process of delivering elements of primary health care (such as providing health, nutrition and family planning), preventing disease, making diagnosis and undertaking case management. They also include the nature of referral, the transportation of emergencies, the effectiveness of monitoring and supervisory services, the nature of managerial support and the interaction and involvement of communities in the implementation process. This assessment may be carried out in one or more of the following methods.

Direct observation

In this method, qualified health workers observe individual or groups of health workers, while providing primary health care services to their patients/clients. This allows the supervising health workers to assess the completeness of the examination or task, the appropriateness of the investigations and interaction, and the suitability of the care/treatment provided. This assessment method however, is costly and time-consuming, and often the health worker under scrutiny may alter the behaviour being observed, which may not illustrate usual routine practice. Thus this method should be used by those managers who can closely monitor their health workers.

Use of records

The use of the health information system is another way of assessing the compliance of primary health care services with quality standards. Despite its limitations in terms of completeness and veracity, documentation is an important element in the delivery of care, and there is an association between the quality of recording and quality of care. The analysis of records may often focus on small numbers of critical quality standards, which may also be taken as representatives of aspects of care, including those that are not directly observed. For example, one can look at the frequencies with which infants are immunized, pregnant women are given critical antenatal care, antibiotics are prescribed, injections are given when drugs could have been taken by mouth, and clinical and laboratory findings which required attention but went unnoticed, or were ignored or dealt with inadequately. The use of extended record data is made easier when these are fed into a computer to be rapidly processed and collated. This can help in conducting a more detailed assessment of quality standards.

Assessment of outcome standards

Outcome standards reflect the effects of care on the health status of the clients and population as a result of promotion, prevention, curative and rehabilitative services or interpersonal relationships with the technical care. In the primary health care context, it is advisable to assess those outcome standards that are most valid and useful in measuring the quality of care and that can be improved by the provision of the indicated optimal quality of care and that are achievable with the available resources. Through this assessment, the measurement may cover only selected standards such as mortality, morbidity and disability or be more comprehensive, covering also physiological, social and mental components of health and illness including symptom level, functional status, satisfaction etc.

Outcome assessment may be carried out prospectively or retrospectively.

Prospective assessment

This may combine process and outcome measures. Through this approach the quality of care is monitored while being delivered, the outcome

evaluated and any necessary corrective improvement measures introduced. For example, clients are followed from the time they come to the care provider until their care ends. The successive steps of this process and their outcomes are prospectively examined. Similarly, the assessment covers compliance with quality standards of investigation, treatment, as well as any deficiencies of quality of care that had contributed to the lack of improvement and any corrective measures introduced to alleviate those identified health problems.

Retrospective assessment

The purpose of retrospective assessment is to identify and correct major deficiencies in the quality of care, based on outcomes that are regarded as evidence of the care process. This procedure aims to assess problems in primary health care that result from inadequate processes of service performance or managerial support. The information is subsequently used for introducing any necessary quality changes and educational activities into the system in order to minimize or avert adverse outcomes in the future.

Through these assessment methods, comparative evaluation of the quality of service delivery at the different levels of primary health care may also be carried out in order to contribute to national decision-making during the planning and resource allocation process. When performing these comparative assessments, it is important to ensure that the differences in quality between the different facilities or levels of care are not due to factors that are outside the influence of service delivery. Differences in type of patient or disease-related factors that cannot be altered by the health system should be taken in consideration.

Communication and dissemination of standards

Standards should not become ends themselves and appear as just additional procedures of performance that result in putting burdens on staff. Instead they should be used as measures that help managers, professionals and the community to focus on the most critical and relevant aspects of the primary health care programme and assist them to monitor the quality of their performance and the outcome of their service delivery efforts. The use of standards for the different dimensions of primary health care service

delivery should appear as the logical response to addressing the quality problems faced during primary health care implementation. The package of quality standards in a particular programme, in a particular country or region should reflect the desired and attainable levels of care. The latter is not static or a one process, rather it should strive for continuous improvement of the health care delivery system.

The health sector and professional community should establish the necessary communication network for providing health workers at all levels of care the unlimited access to these standards. The communication and dissemination should be coordinated by national and provincial/regional bodies that take the responsibility for development and implementation of these standards

Planning and piloting phase

In order to strengthen the management commitment in investing resources in the form of structural changes and human resource development, a pilot quality programme should be launched in one or more districts. This will enable the health system to build up experience and adapt broad quality standards to local needs, and also to expose health workers and their managers to its field dimensions.

The disseminating and communicating of primary health care quality standards at this phase requires knowledge of what health workers' culture, experiences and motivations are, and what the characteristics of standards should be to make them most attractive. Quality standards must be introduced to all primary health care staff operating at different levels of care, and the management must provide strong leadership. A major cause of failure is a lack of understanding, commitment and leadership. Although health workers may agree that the common goal of quality standards is to provide good promotion, prevention and curative care and outcomes, they may often differ on the incentives and motivations that would persuade them to accept the necessary change for introducing quality standards in the primary health care system.

The application of quality standards must not be imposed at the start, as this may lead to the failure of the initiative. Quality standards must be presented to health workers in order to gradually gain their commitment and

change their culture, working relationships and their level of preparedness to change.

Communication in the implementation phase

In the implementation phase it is important to communicate the basic information about what quality standards involve and how they may affect the practice and future needs of both providers and users, which differ between categories. For example, health workers may view this as an opportunity to learn more and acquire new technologies, while managers may view it as means to reduce expenditure and make the services more attractive. Clients and the community, on the other hand, may consider this as a means of their empowerment. The standards may be presented in training workshops where participants learn the skills necessary for their implementation. An important aspect, however, is the need to address the service culture.

The replication phase

To successfully replicate the pilot phase, the standards must be promoted to all categories of primary health care health workers and to the community. This leads us primarily to focus on changing attitudes to quality and behaviour, by showing to staff that there are tangible benefits for them in improving quality.

At this stage it is important to consider the necessary structural changes, define roles and relationships and develop teamwork, and lead by example. The staff's commitment is further consolidated when they find the quality idea is consistent with their values and helps to facilitate their desires for the future; and indeed it does improve the quality of performance and outcome. Subsequently this generates a sense of satisfaction, pride and achievement. The system improvement followed by compliance with structural standards alleviates any poor performance related to the ineffective and poor environment of the health care delivery system.

The maintenance phase

In the maintenance phase, it is important to reinforce the commitment to sustaining the behavioural change in making constant efforts towards

complying with quality standards. Without this maintenance, the initial effort may easily decline. The support of professional associations and their involvement is highly beneficial. Promotional literature that illustrates its effectiveness and the values that underlie the need for quality standards should be clearly outlined. It is also important to identify the barriers that could inhibit the reinforcement of quality standards in primary health care such as low morale, the increased pressure on workers' time, low job satisfaction, lack of political commitment and the fear of being scrutinized. These barriers need to be acknowledged and dealt with, by increasing staff participation throughout the process of change, by introducing non-monetary incentives to support the change and by providing opportunities to learn new skills or having better career prospects.

Ensuring compliance to standards

Compliance with standards may require changes in the behaviour of practitioners, others require changes in policies and procedures and systems to support their implementation. Staff may need time to understand them and find ways of complying with them. The following are some of the strategies that can be considered.

Integrating quality in primary health care assessment methods

Placing quality assessment and improvement in the primary health care system of monitoring, evaluation and planning of health care services is an effective strategy for promoting compliance. This process will help in identifying how the standards contribute to improving the quality of primary health care services. These indicators are then incorporated into the basic health information system. Failure to achieve the desired standards should lead to the design of the necessary corrective mechanisms to overcome the problem.

Introducing primary health care quality as regulatory norms

Although it is not desirable for quality improvement standards to be enforced in a rigid manner, the existence of such regulations may protect a programme against laxity and provide support to quality improvement efforts in the health system.

Inducing a quality culture by establishing quality teams

The quality team is a means of inducing a culture of quality and responsibility irrespective of workers' professional or operational level. A process improvement team is a voluntary group of workers with a shared area of responsibility. They meet together periodically during working hours and discuss their quality problems related to processes. They analyse causes, suggest solutions and take appropriate action. This could be organized at the community health workers' level, where they can interact with their local communities in order to discuss quality problems related to primary health care delivery in the area and attempt to resolve the underlying causes.

Similarly, quality teams may be constituted at the health centre level. This brings together the members of the health team, community representatives and representatives from the health-related sectors operating in the health centre catchment area. Based on the nature and dimension of quality problems, one or more quality teams are formed which collectively or in smaller groups address the quality problems of the health care system in the area that are structure-, process- or outcome-related. Each quality team assumes voluntarily the responsibility of identifying the quality problems of a specific service component and suggests the necessary corrective interventions for implementation.

It is self-evident that the partners in these quality teams require communication skills, knowledge of quality measurement techniques and problem-solving strategies that are to be an integral part of the pre- and in-service training of health workers. The problems that a quality circle at a level of care is unable to resolve are referred to its supervising level in the primary health care network. The district management team should lend maximum attention to these quality problems and create the culture at the lower tiers of service delivery to facilitate the implementation of the recommended corrective measures until the identified impediments are removed.

Inducing social control and responsibility

Efforts are needed to involve the community in the quality maintenance process and ensure that individuals, social organizations, community leaders and the different social groups using primary health care

services understand and support quality improvement standards in their local health care services. The community may also take the initiative in generating resources to improve the capacity of care in these facilities or assume the responsibility of extending the primary health care services and practices to their social environment through the home health care/self-care approach.

Reassessment and evaluation of standards

Standards are a powerful tool for quality assessment and quality improvement. Health interventions will produce different results and outcomes depending on the level of compliance to the set standards. In the reassessment and evaluating process it is important to relate structural and process standards to outcomes. If a set of structural or process quality standards fail actually to affect outcome, we should not pursue with them as the compliance with most of these standards carry a considerable price tag.

A prospective way to evaluate these standards is to follow clients or a target population from the time the quality health care intervention is implemented to the development of the set target outcomes. Another way of evaluating the relevance of quality standards is to assess the adverse outcomes produced by poor compliance. Efforts should also be made to establish the potential linkages between the compliance with process standards and the desirable outcome standards. The latter should not be set merely on the basis of efficacy when these strategies are applied in ideal conditions and in centres of excellence with favourable circumstances likely to produce good outcomes. Instead the effectiveness of these standards needs to be evaluated when these practices are extended through primary health care to the community and integrated in routine primary health care practices. The use of quality standards must be transparent to allow the user to check their content.

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Chapter 3

Infrastructure of quality improvement

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In this chapter, several topics will be discussed. First, selected tools and techniques of quality improvement will be presented. Data collection and display tools as well as analysis and improvement tools will be discussed. An outline of a quality improvement awareness programme will be followed. An awareness programme should include a list of possible workshop and topics that should be mastered by the quality improvement specialist. This list will be presented as a guideline for such a programme.

The second section of the chapter will be devoted to the organization of quality improvement programmes in primary health care. A discussion will follow on the involvement of local health care personnel as well as the local community in quality improvement activities.

Data collection and display

The following section on data management in quality improvement is adapted from a chapter of *Textbook of total quality in healthcare* (Al-Assaf and Schmele, 1993). It contains valuable tools and techniques that health care personnel should be aware of and should master their use in quality improvement efforts.

One of the main principles of quality improvement is statistical thinking (Deming, 1984). Using statistical methods in data collection and

analysis increases the credibility and accuracy of the information obtained. Statistics is a science based on the quantitative measures of data and their elements. It is therefore not surprising to see that quality improvement emphasizes the use of statistics to accurately interpret data and produce meaningful information to understand, improve and monitor processes in an organization.

In this section, several tools and techniques will be introduced. These tools and techniques are used in quality improvement for process analysis and improvement. Leebov and Ersoz (1991) suggest several tools for use in quality improvement. We further categorize these tools into two separate categories reflecting their *usual* cited use as follows:

- tools for identifying, collecting and displaying data
- tools for quality improvement.

Let us now describe and present some of the most common tools in each of these categories.

Tools for identifying, collecting and displaying data

- surveys
- brainstorming
- brainwriting
- logs
- check sheets
- pie charts
- scatter diagrams
- histograms.

Tools for quality improvement and monitoring

- nominal group technique
- multiple voting technique
- weighted voting technique
- rank ordering technique
- balance sheets
- trend and run charts
- flowcharts

- Pareto diagrams
- control charts
- cause-and-effect diagrams
- decision-making matrices.

Tools for identifying, collecting and displaying data

It is imperative to understand that the process of collecting data has several processes that precede it. The objective of collecting data is to collect adequate, comprehensive, accurate and representative data elements. Then, all the limits and biases the data might encounter through the collection process or during the analysis phase should be identified and listed. One must also take into consideration the different sources of data—internal and external. Caution should always be applied when collecting and interpreting data from different sources. Data collection sources may be heavily biased from source to source. Also the list of data sources should be exhaustive, and every effort should be made to make sure data are collected from all actual and potential sources. If however, exploring all sources of data is not feasible due to certain barriers (resource, logistics, etc.) then a statement to this fact should be provided with the report on the data collection and analysis. Therefore data collection barriers should be identified as early as possible, and attempts should be made to overcome these barriers as much as possible. Accurate and useful information depend heavily on data integrity, validity and applicability.

Surveys

One of the most widely used techniques in collecting data is surveys. Collecting data from a target population through surveys is considered simple and fairly accurate. There are however several questions that must be applied when conducting surveys to ensure adequate and true representation of the population under study. These questions might include the following. What is the *objective(s)*? Is there a need to select a *sample* of the population? Which *method* should be used in surveying the population? What *questions* should be asked?

Let us explain each these four major issues concerning survey techniques.

Objective(s)

Each survey must have an objective or a set of objectives that it is set to achieve. The objective(s) have to be realistic, measurable and applicable to the target population. For example, an objective of a survey could be to find out the percentage of discharged patients that have used a "hotline on patient education" during the three months after their discharge from hospital during a specific year. Objectives are excellent measuring items, useful in the evaluation of surveys before, during and after data collection.

Sample

The population sample is defined according to the type and the size of the target population. First, one must define and identify the target population. The next step is to see if this population is accessible, if data already exist on it, and if it is manageable or whether a sub-sample will be needed (based on resources available, and logistics.

If we decided to survey the total target population, as in our earlier example, all the discharged patients from our hospital during a specific calendar year, then this type of sample is called a *census* sample. This kind of sample is obviously the least biased sample. If, on the other hand, we decided to survey a smaller number of individuals in a population then we would need to determine two major elements; sampling method and sample size.

Sampling methods will select either a probability or a non-probability sample of the population. A probability sample could be a simple random sample, a stratified random sample or a systematic sample. A non-probability sample could be a convenience sample, a purposive sample or a quota sample. The following is a brief explanation of each of these sampling methods:

Simple random sampling is a process where the required sample size is selected randomly from the total population under study through the use of randomly generated number tables, random number generating computer programs or lottery. This type of sampling methodology produces a simple but unbiased sample.

Stratified random sampling requires the determination of a sample based on one or a set of categories, usually demographics. In our earlier

example we would select a random sample from the population by deciles age categories or another by income level categories, etc.

Systematic sampling is done by generating one random number and then selecting a constant interval. Thereafter every case that falls at that interval will then be selected. For example if our random number was 9 and the constant interval was 6, we will then select the ninth discharged patient and then every sixth discharged patient thereafter—15th, 21st, 27th, etc. Here of course we are assuming that those patients were not discharged using any systematic interval.

The other type of sampling method is the non-probability sampling method. Three different sampling techniques are discussed below using this method. For the following non-probability sampling techniques one must keep in mind that samples from these categories may not be representative of the target population. Therefore inferences should be strictly related to the sample of the study while projections on the total population from sample studies alone should be accepted with the caution of potential non-representation.

Convenience sampling is performed to select readily available data. For example we would select those discharged patients from the surgery unit during March of a given year only. This sampling is considered to be the weakest to withstand the test of sample representation of the population or bias.

Purposive sampling is a technique used to select a sample for a specific purpose. For example following a 30-day probationary period to re-accredit a hospital, the accrediting agency will only look at the hospital activities during the probationary period.

Quota sampling is usually chosen to select a sample based on an arbitrary quota. For example we select only 5% of the target population to be included in our sample.

Sample size

Calculating the sample size is the second element concerning sampling in general. To determine sample size one would require the availability of several preliminary data elements. One method of determining sample size uses the following equation:

$$N = \left(\frac{z}{e}\right)^2 p(1-p)$$

where N is the sample size, z is the level of confidence determined by the z score (statistical table), e is the potential (and acceptable) error rate in choosing the sample and p is the proportion of the target population in the total study population.

Once we have determined the sample size and selected a sampling technique, the individual members of the sample can be identified. One must now determine the method by which to survey this sample population. Selection of any method is dependent on availability of resources (human and physical), time, accuracy, bias and convenience.

Method

There are at least three main methods of surveying a population. Surveys can be conducted through a *mail* survey, a *telephone* survey, or through an *interview*, all of which require a predetermined and pre-tested questionnaire.

In a mail survey one is able to reach larger number of individuals with the least amount of expenditure and human resources. This method also provides honest (especially if the respondent's identity is anonymous) and least biased answers. The major problem however with this type of survey is the response rate, which if it is too low, renders the sample not representative of the total population. Of course misinterpretation of the survey questions or not completing all the questions may cause a problem in accurately analysing the results. Also, mail surveys require at least three to four weeks to complete and analyse.

A telephone survey is a very accurate survey but answers could be biased or in response to leading questions. Since a human element is involved in actually collecting the data over the phone, specific training and coaching is required to accurately record and extract data from the respondents. This method has the advantage of receiving a 100% response rate of those agreeing to participate and can be completed with a relatively short period of time, especially if collecting responses were performed electronically.

However, both mail and telephone surveys can introduce bias, especially in the developing world. Mail, because in low literacy countries only the literate would respond (presupposing a functioning mail service); telephone, because in poorer countries, only the wealthier families have home phones. Therefore these issues should be addressed if either of these methods is chosen in order to minimize bias.

The face-to-face interview is the most accurate, but again could be biased since the identity of respondents, albeit protected, is not anonymous. Again, data collectors (interviewers) should be adequately trained in interviewing techniques and should be instructed to avoid leading questions in order to minimize response bias. Interview surveys usually enjoy a much higher response rate than other types of survey, but are considered the most expensive and the most inconvenient type of surveys due to scheduling and respondent availability.

Questions

The integrity of the data collected through any survey depends on the content and the quality of the survey questionnaire. A questionnaire should be designed to provide information that can answer the survey objective(s) adequately. Each of the questions included should be composed and designed relative to the sample population. Therefore questions must be clear, simple to understand and should require the minimum of effort (and time) from the respondents to answer. It is suggested that closed-ended questions are easier to answer; they are certainly are easier to analyse. In other questions where the opinion of the respondents needs to be captured and quantified, one may design the questions in the form of a statement. Each statement is succeeded with a choice of several answers (on a numeric scale) based on the level of agreement or disagreement with that statement. Once the questionnaire is designed and the questions are constructed, one must proceed to administer the questionnaire to a small number of individuals that share the same characteristics of the sample population. This process is called the pre-testing process and will mimic the survey process in terms of survey process and methodology. This process is important since it will give the researcher the ability to predict the behaviour of the sample population. It will also provide the researcher with feedback regarding the

design, the quality, and the efficiency of the survey instrument to collect the desired data. Pre-testing of the questionnaire will provide the researcher the chance to modify the questionnaire for clarity making it simpler to understand and easier to answer.

Brainstorming

Although brainstorming is listed here under tools for identifying, collecting and displaying data it is a quick simple and very useful tool that is equally important in making quality improvement decisions. This technique is usually group-oriented, whereby a group of individuals meet to generate an exhaustive list of ideas regarding an area or a topic at hand. It is a process that stimulates and encourages creativity and independence of thinking. The concept of creative and independent thinking is facilitated by one of the rules of brainstorming that allows individuals to list any idea they choose without being criticized for it. The list generated can either be used to answer a question or to trigger other questions in problem identification and solving. Brainstorming is performed to generate the information needed to proceed to other steps in the quality improvement process. This technique becomes especially useful when all members of a group participate and no boundaries of thought are adopted. The following is a description of the brainstorming technique.

Members of a group gather to discuss an issue such as the causes of long patient waiting time in an emergency department. After few minutes of silence is passed to think about the issue, a group facilitator is selected and is asked to record all the ideas generated from the group on a board or a flip chart that can be easily seen by everyone in the group. Each member will then be given a turn to voice any of their ideas on that issue. This is done by using either a freewheeling technique (anyone can call an idea) or by a round-robin technique. The facilitator lists those ideas with no discussions, judgements or criticism. Brainstorming sessions should move fast, therefore each member is given only a short period of time (15 seconds) to voice their ideas. Every idea is recorded in the person's own words. Group members can "hitch-hike" on ideas that were generated by others. Several rounds of soliciting ideas from the group members is performed until all members have

exhausted all their ideas or an agreed time limit is reached. Sessions usually last for about 15 minutes or less.

The next phase is to examine the list generated, and discussion is encouraged to clarify each idea and the objective behind it. All members can ask questions about any or all of the ideas so that a level of common understanding of each of the ideas is generated.

Once these ideas are further clarified, then the whole list should be evaluated and those ideas that are similar should be consolidated. Therefore in this step the list of ideas is revised and duplications are eliminated. Ideas can then be sorted into related themes or subtopics. The final list is adopted by the group and is put to the purpose it was originally intended to serve.

Brainwriting

This technique is similar to brainstorming, where members of a group gather to generate a list of ideas on a topic. Unlike brainstorming, the ideas generated are evaluated and used aggressively by other members in the group to expand their list of ideas. Brainwriting is performed with each group member is asked to write a list of ideas on a piece of paper. All the papers are then left at the centre of the table or the room for all the members to view and choose from to either add to or modify ideas in the lists. Another method is that each member is given 20 to 30 minutes to generate ideas and record them on separate flip charts that are then posted around the room. Each member is then asked to read those ideas recorded by others and go back to their sheets to continue listing more ideas that were stimulated by others' ideas. Brainwriting has the advantage over brainstorming, where some members of the group can dominate the idea-generating process: it provides all members equal opportunity to participate and eliminates less thought-out ideas. Brainwriting can have the same uses as brainstorming in collecting and displaying data as well as in quality improvement efforts.

Logs

Logs are both simple to construct and easy to use. It is useful to keep track of the sequence of events or the time occurrence of certain data for trend charting or frequency analyses. Logs are constructed by identifying the data to be captured and the other elements associated with them. For

Medical record	Reviewer	Date	Time	Finding(s)

Figure 3.1. A sample log

example one may want to keep a log of all the medical charts reviewed by the chart reviewers by data by time by finding. Figure 3.1 shows a log sheet for a review of medical charts. Logs should be simple in design and user-friendly. Logs are usually drawn as rows and columns with the summary statistics at the bottom of the log sheet. Recorders should be given a brief orientation session on the log's use and are encouraged to only record the raw data requested and not to try to identify or elicit a trend from the data.

Check sheets

To answer the questions "what do you want to know?" and "what is the most reliable way to collect the data?", one must construct a check sheet. Check sheets can be drawn in the form of a table or a diagram. The recorder will make a check mark or enter the appropriate data across from the item in the sheet once the observation occurred or the event happened. Figure 3.2 illustrates the use of an example of an event on a check sheet.

Check sheets are useful for collecting data in order to answer questions regarding resources allocation, analyse a current problem or identify potential problem areas.

Pie charts

Pie charts area powerful tool for clear and simple presentation of data. A pie chart is a form of graphic presentation of data elements that are part of a whole; for example the distribution of eye colour in a patient population (Figure 3.3). This tool is useful for visualizing the differences between the

different parts compared to the whole. Pie charts can often be used in place of bar graphs.

There are a few rules however for pie chart construction:

- pie chart segments must add up to 100% of the whole

Number of emergency department patients per shift

	8–12	12–4p	4–8	8–12	12–4a	4–8	Total
Day							
Mon							
Tues							
Wed							
Thur							
Fri							
Sat							
Sun							
Total							

Figure 3.2. An example of a check sheet

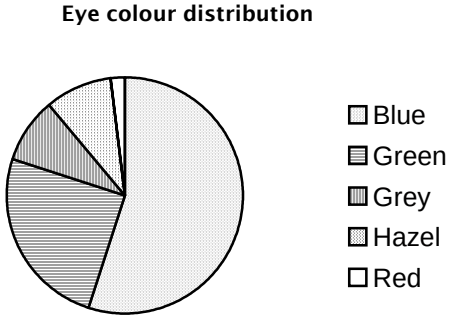


Figure 3.3. An example of a pie chart

- the number of segments in a pie chart ideally should not exceed more than six segments to avoid "cluttering" of information.
- each segment should indicate the percentage amount of that segment compared to the whole population to enhance comparability.
- if one or more categories have a zero value, then pie charts should not be used.

Scatter diagrams

Scatter diagrams are useful in displaying data from two variables that may have a relationship with (but not necessarily an impact on) each other. The data collected for each variable are then plotted on a graph with one variable on the *x*-axis and the other on the *y*-axis. If a pattern is noticed then a positive or a negative relationship may be concluded. This technique is the easiest way of showing correlation without actual quantification of the strength or the significance of relationship between the variables. It is however simple to construct and is useful in showing patterns of data and providing supportive data for cause-and-effect diagram construction (described later in this chapter). Figure 3.4 shows an example of a scatter diagram between paired data. Although scatter diagrams are sometimes used to plot pairs of discrete data (e.g. number of charts with number of errors), they are most useful when plotting continuous data (e.g. patient temperature with amount of medication).

Histograms

Histograms are modified bar graphs, where the data on the *x*-axis are continuous data, thus the bars are adjacent to one another. Histograms are useful for presenting a pictorial view of data and showing data patterns. Histograms are constructed primarily to display data. Figure 3.5 shows an example of a histogram. The *x*-axis shows a day divided into time intervals while the *y*-axis shows the number of routine patients visits completed within each time interval.

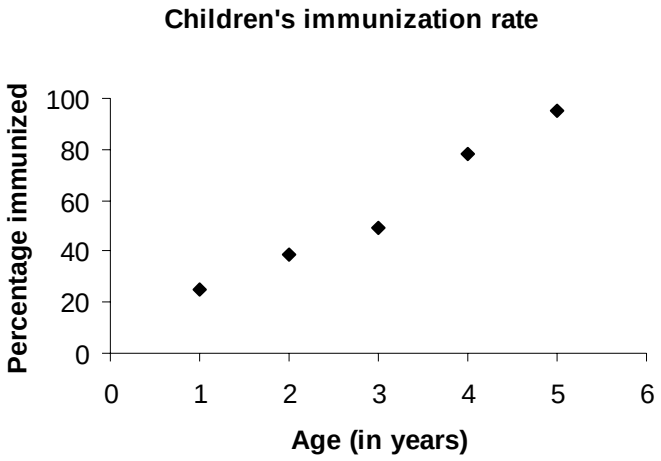


Figure 3.4. An example of a scatter diagram

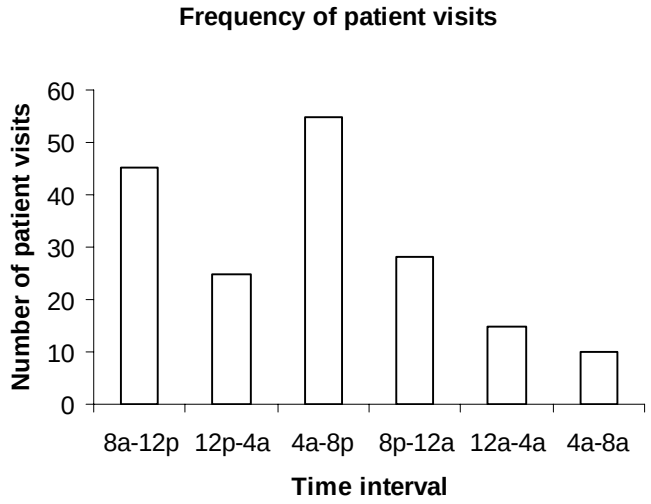


Figure 3.5. An example of a histogram

Tools for quality improvement and monitoring

Once data are collected and other tools are constructed for displaying data, data analysis begins. Several tools can be used to aid in this process. Quality improvement tools are important for decision-making and for evaluating the progress and the success or failure of the decision made to improve a process. There are several process improvement tools as explained below.

Nominal group technique

Nominal group technique is a continuation of the brainstorming and the brainwriting techniques. Once a list of ideas is generated, a process of prioritizing or ranking of ideas begins with all the group members. Ranking is done by one of three popular methods (as described below): multiple voting, weighted voting or rank ordering technique. A second list is then generated with the ideas ranked accordingly and presented for its intended use of implementation and process improvement. This technique is especially helpful for decreasing the number of ideas to a shorter list of manageable number of "best" ideas.

Multiple voting technique

As a complementary technique to brainstorming and brainwriting, multiple voting technique is intended to shorten, evaluate, critique and rank a long list of ideas. Multiple voting is performed by the members of the group that generated the list of ideas. The group will decide on a number of votes each member may have. Members cast their votes on the set number of ideas. All those ideas voted on by group member are posted on a flip chart to be visible by all members. Discussions then follow to determine which ideas received the most number of votes and whether these ideas are adequate to describe the group choices. Further consideration of other ideas may be required if the group decides that more ideas are needed on the final list. The new and final list of ideas is then presented.

Weighted voting technique

Weighted voting technique, as with multiple voting technique, is useful in determining a final and best list of ideas to be implemented by a

	Criterion 1 Weight=	Criterion 2 Weight=	Criterion 3 Weight=	Criterion 4 Weight=	Criterion 5 Weight=	Total
1.---------						
2.---------						
3.---------						
4.---------						
5.---------						
6.---------						

Figure 3.6. An example of a weighted voting matrix

group of individuals. As with multiple voting, members cast their votes on the full list of ideas or on only a shortlist of ideas. In this technique, group members are provided a set number of votes to vote on a list of ideas. Usually the number of votes per group member is one and a half times more than the number of ideas to be voted on. Each individual member will have the freedom of spreading his or her number of votes across the ideas selected. A grid or a matrix is set up to record the voting pattern of the group member and to find out the total number of votes each idea received from the group. Figure 3.6 shows an example of a weighted voting matrix.

Rank ordering technique

In conjunction with brainstorming and brainwriting, rank ordering technique is used to rank ideas for further consideration and/or implementation. Rank ordering technique requires the ideas generating group to work on a shortlist of ideas (ideally fewer than 10 ideas). Each group member is asked to rank the shortened list (using any of the above techniques) of ideas starting with one as most important and ending with the

least important idea. The recorder of the group will post the list of ideas on a flip chart record the ranking given by each member to each idea. After recording all the rankings for each idea, these are then added together to get the total ranking score given to each idea by the group members. Since a score of 1 is given to the most important idea, the idea that receives the least score is therefore the most important, and so on for the rest of the ideas.

Balance sheets or force-field diagrams

Balance sheets (or force-field diagrams) are used to help a group of individuals select a shorter list of ideas, options, decisions, etc. All of the ideas under consideration are listed on a two-column table. One column will be noted as the positives/the advantages/the strengths/the driving forces column. The other column will be the opposite descriptors column. Each idea is then discussed, and a listing is produced by the group members regarding the positives and the negatives of it. After considering all the ideas on the list, the group "balances" the positives with the negatives—the forces for it and those against it—and then determines if some of these ideas might be eliminated. This technique is again very useful in determining the best ideas for further consideration and implementation. It is therefore another important technique in the process of quality improvement.

Trend and run charts

A trend or a run chart is a line graph that visualizes a pattern of behaviour of certain data over time. It is therefore a pictorial indicator of the extent of fluctuation of performance of a data element during a period of time. Trend charts are very useful in displaying and monitoring the behaviour of data as well as predicting future performance. Figure 3.7 is an example of a trend chart of the number of patient complaints by month for one calendar year in a hospital.

The figure shows a sharp increase in patient complaints during the last three months of the year. This piece of information would alert the process improvement team and allow them to investigate the reasons for this sudden increase in patient complaints and to determine whether this trend continues in coming months. With this type of use, trend charts can play a major role in

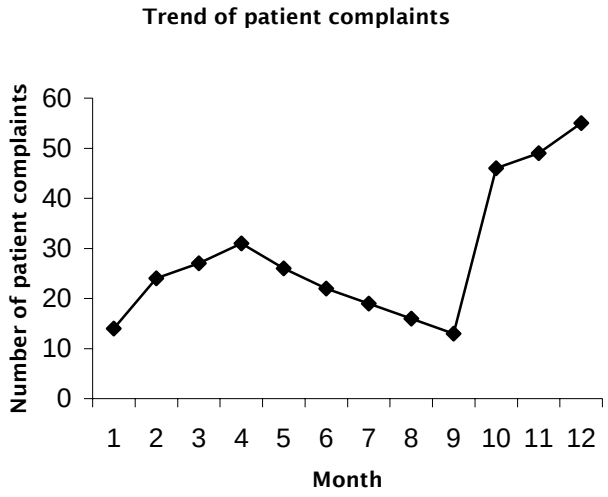


Figure 3.7. An example of a trend chart

identifying problems to be solved, thus further improving the process of quality improvement.

Flowcharts

Flowcharts are a step-by-step sequence of processes and sub-processes that pictorially includes events, reaction(s) or a decision(s). This tool provides a detailed list in a form of a sequenced diagram outlining all the action and steps required for each and every process in an organization. It also provides a common language to be used by teams when discussing the different elements of a process. For example one could flowchart any process in a hospital from patient registration to patient admission and discharge. Each of the steps in the process is denoted by a symbol indicating the nature of the action or the reaction. Figure 3.8 shows an example of a flowchart of the process of a hospital outpatient visit by a patient. The symbols used in the flowchart makes it easier for the examiner to identify the different types of action or transactions occurring while the process is in motion.

Flowcharts come in several types: detailed (with all of the steps and activities identified), top-down (only an outline of the major steps) and

work-flow, based on the actual steps occurring in a specific work process. Team members should be collectively involved in flowcharting a process. Teams should start by defining the process in consideration, and then a determination of a beginning and an end of the process is made. The team will then start to write the steps of the process in the sequence they occur. Certain members of the team or with the aid of action teams will be responsible for flowcharting the technical steps in the process. Once a flowchart is produced of the process the team will revise it again for completeness and correct any errors. The final version of the flowchart is then transferred to a sheet of paper denoting the steps of the process in symbols and is put in use by the organization. Figure 3.9 shows some of the more common symbols used in flowcharting processes.

Flowcharts are important tools both for displaying a process and for understanding the process steps. It supports the principle that if you understand your processes and how they work then you will be able to identify process requirements and bottlenecks. Flowcharts are management tools that will support the quality improvement efforts of an organization.

Pareto diagrams

At the turn of the 20th century, an Italian economist called Vilfredo Pareto argued that wealth in society is distributed—unequally—according to a logarithmic law. The quality expert Joseph Juran noticed that the majority of defects in a system are explained by a small number of flaws. By (slightly flawed) analogy with Pareto's observation, he named this phenomenon the Pareto principle. Problems of quality can be divided into the vital few and the trivial many. The procedure that classifies these problems is thus called Pareto analysis.

The Pareto concept is also known as the rule of 80–20. In health care this can be applied as saying that 80% of documentation errors are caused by 20% of staff. Another example would be that 80% of medication errors are caused by 20% of nursing staff, and so on. One can further analyse data using this principle by the use of bar and line graphs, as follows:

- identify a quality problem to be studied, e.g. patient complaints about dietary services
- determine and carry out a data collection method, e.g. mail survey

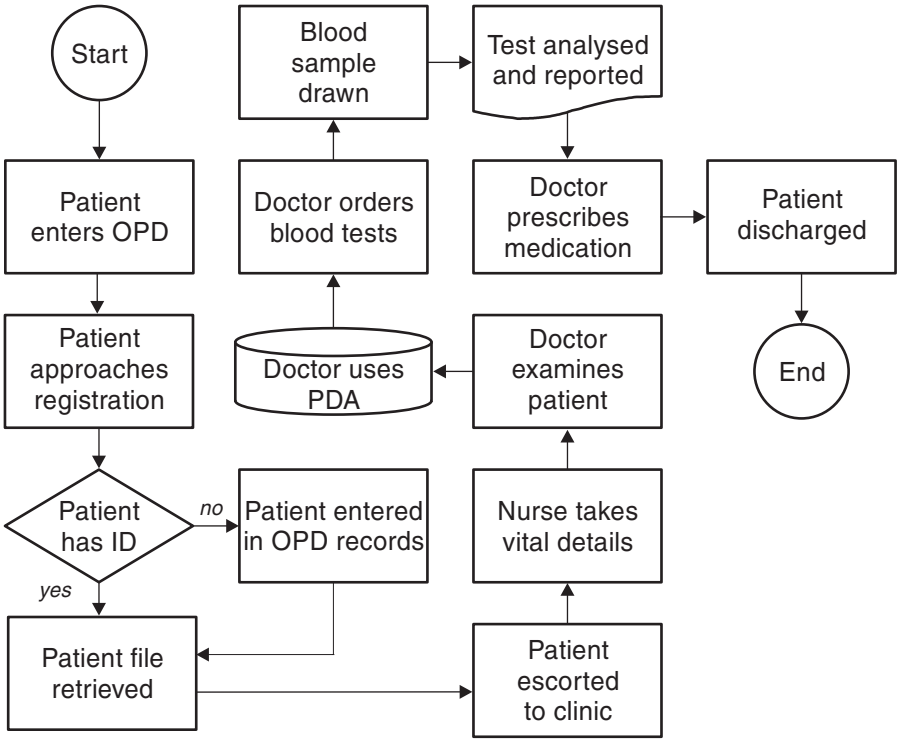


Figure 3.8. An example of a flowchart

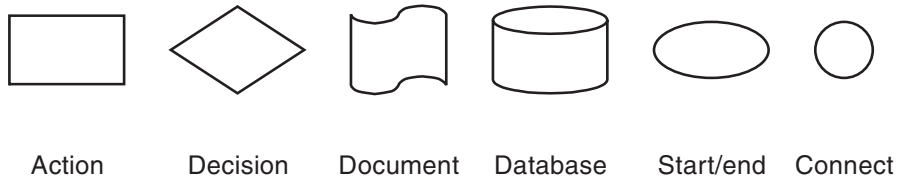


Figure 3.9. A selection of flowchart symbols

- categorize the complaints cited by respondents according to type, e.g. temperature, taste, promptness of service, variety, etc.
- calculate the frequency of complaints by category, e.g. temperature 74 complaints, taste 43, etc., then derive a figure for each category as a percentage of the total
- plot the frequencies of each complaint categories on a bar graph with the categories in order of descending frequency from left to right on the *x*-axis. Two vertical axes must be used; the left axis measures the actual number of complaints, while the right axis is calibrated from 0% to 100%.
- calculate the cumulative percentage totals going from left to right. Plot these totals on the same graph but as a line graph as shown in Figure 3.10.

Pareto diagrams are important not only for displaying the causes of a quality problem, but also for providing the quality team with a diagnostic and monitoring device that can be used to identify and monitor progress in the quality improvement measures being tried. Their importance is evident

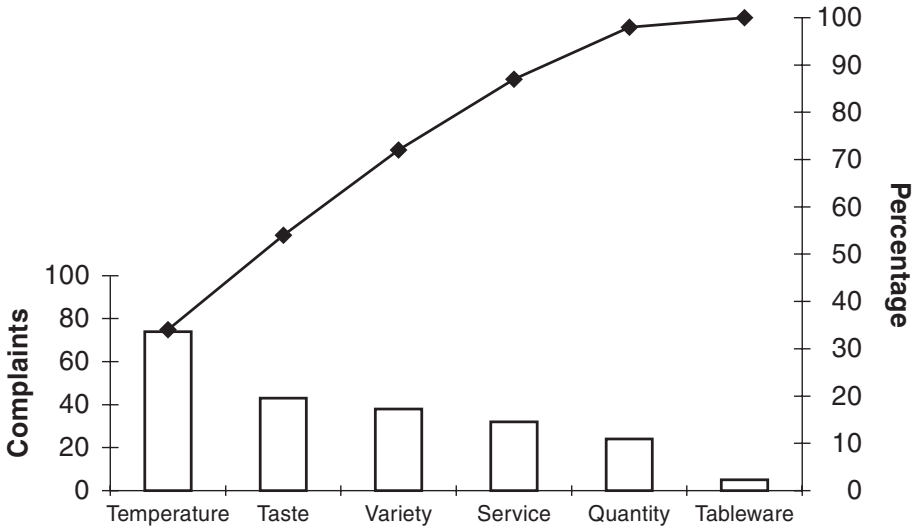


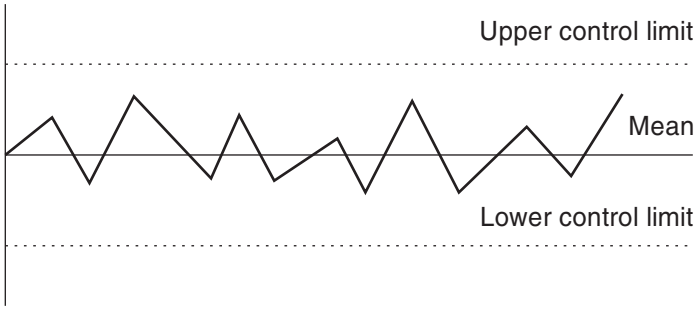
Figure 3.10. An example of a Pareto diagram

when Pareto diagrams are used as incentives for achieving an eventual flattening of those bar graphs that represent frequencies of quality problems.

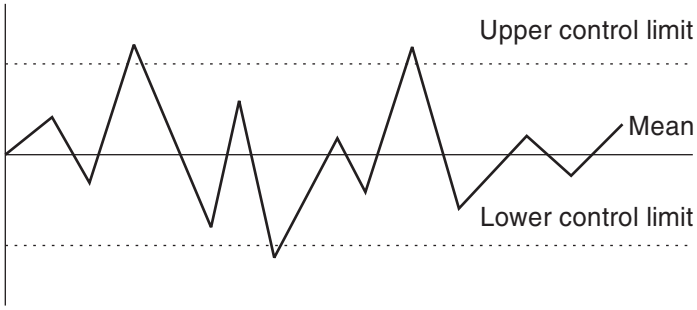
Control charts

A control chart is a tool designed to monitor a process over a period of time in order to study its trend and variation. It is constructed to display process stability around a historical (acceptable) trend with a capability of measuring small changes in the process. A control chart provides an analysis of a process behaviour and indicates when certain factors have had an impact on process trend. It is a useful tool in process improvement efforts in that it identifies the times when process is "out of control", i.e. outside the calculated control limits. It is therefore useful in identifying improvement opportunities of a process. It is also used to determine whether process variation from the norms (averages) is due to "special" or "common" causes. Special causes have a tendency to occur sporadically and acutely and will therefore need to be attended to by the management team. Common causes on the other hand are long-term causes do not destabilize a process but can produce a slight impact on process variation away from the norm. Common causes of a process variation are the result of interaction of several causes over a period of time. Common causes need to be studied by appropriate quality improvement teams of the organization. Control charts are useful in controlling variation at an acceptable level of measurement.

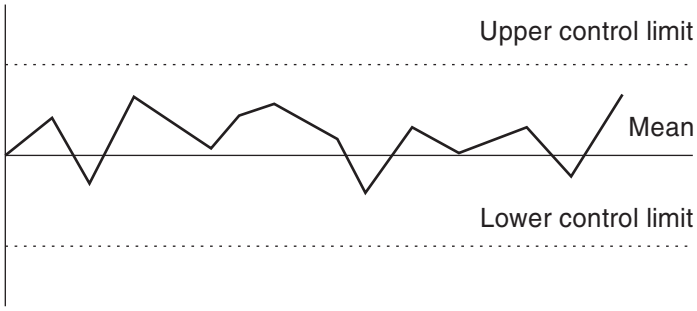
A control chart is basically a run chart with three additional horizontal lines: an average value line between an upper control limit line and a lower control limit line. A process is said to be in control if the trend line lies within the upper and lower control limits around the average (Figure 3.11a). In this case variation is caused by common causes and therefore an intervention by quality teams is necessary. If however, the trend line falls outside those lines then the process is said to be out of control (Figure 3.11b). Here the causes making the process fall outside the control limits are be special causes, and therefore it is management's responsibility to resolve it. There is however one additional element to this concept. The process is again considered to be out of control if at least three consecutive points on the process trend line fall below or at least three consecutive points fall



a. Process in control



b. Process out of control



c. Process out of control

Figure 3.11. An example of a control chart

above the average line even though the process trend line is between the upper and lower control limits. Two successive points out of the three must be at least two standard deviations from the mean. Here again special causes are attributed to this type of trend (Figure 3.11c). Other rules apply to the concept of process control, and the reader is instructed to consult the reference by Finison et al.(1993). Control limits are not thresholds or standards. They are measures that describe the behaviour or the nature of a process. Therefore a process that is in control is not necessarily a good process and a process that is out of control is not necessarily a bad process.

To construct a control chart one needs to calculate the averages of a process/quality problem over time, for example the number of medication errors per day per week over a five-month period. It is recommended that 20 data points be used to construct a control chart. An overall mean $\bar{x}$ is calculated which will represent the middle horizontal line on the chart. The standard deviation of the mean σ is then calculated, using the following formula:

$$\sigma = \frac{\sqrt{\sum (x_i - \bar{x})^2}}{n-1}$$

The upper control limit is calculated and is equal to 2 or 3 standard deviations above (plus) the mean while the lower control limit is equal to 2 or 3 standard deviations below (minus) the mean. A line graph of the data points is plotted with the number of the weeks on the *x*-axis and the average number of errors per day per week on the *y*-axis. The graph is then examined to determine whether the trend of medication errors is in control or if it is out of control. The process is attended to accordingly as was mentioned above.

It should be noted here that the control chart described above is only one type, known as the *x*-bar–*s*-bar chart as it uses the average and standard deviation as limits. Other types of control charts will not be addressed here, such as the *p*-chart, *np*-chart, *c*-chart and *u*-chart. The *x*-bar chart however is considered the most useful in health care data analysis. Other less common types of control chart are available, and their use and selection depends on the type of data to be analysed. The references at the end of this chapter such as Finison et al. (1993) and Omachonu (1991) are selected to provide the reader with additional information on control charts.

Cause-and-effect diagrams

A cause-and-effect diagram is sometimes called a fishbone diagram, because of its look, or an Ishikawa diagram, after its inventor. It is a tool useful in identification of problem causes and sub-causes. A cause-and-effect diagram is a diagram that displays root causes of a problem of a situation in several related categories of cause. Each of these categories displays several subcategories, each of which is further subdivided. Fishbone diagrams use few other quality improvement tools to construct, such as brainstorming or surveys. An example of such a diagram is shown in Figure 3.12.

Cause-and-effect diagrams are constructed by the quality improvement team in a few steps. Once a problem is selected for study, the causes of this problem are listed. The list is further refined to reflect realistic and traceable causes for further study. The list of the causes is then classified into categories (and subcategories) and these are then displayed on the diagram with arrows directed towards the main problem as seen in Figure 3.12. Categories are either selected randomly by the team or selected from a standardized list of possible causes of variation by category. A separate list of causes may be generated for each of the following categories: people, materials, machines, methods and measurements.

Decision-making matrices

A matrix that can be used for decision-making is composed of a table of rows and columns. The rows will display the list of alternative decisions

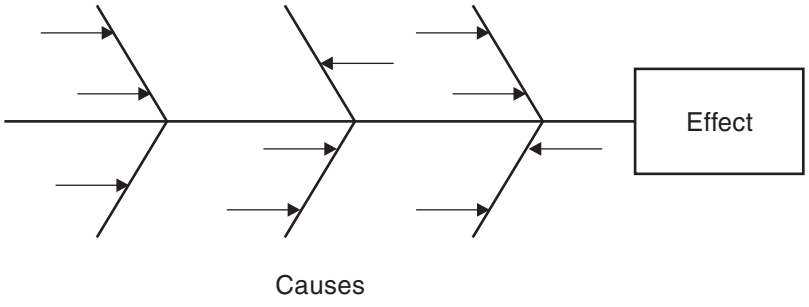


Figure 3.12. An example of a cause-and-effect diagram

or solutions for improving a quality problem, while the columns represent the criteria for judging between those decisions. Criteria can be given different weights by the team to indicate importance of certain criteria over the others. Examples of criteria are cost, politics, staff support, impact and administration.

Decision matrices are very useful in making rational and democratic decisions intended to solve a problem or improve a process. Figure 3.13 shows an example of a decision-making matrix. The alternative decisions are listed in the left-hand column, while the evaluation/selection criteria are listed across the top row. Also notice that each criterion is further weighted according to its importance and feasibility.

A decision-making matrix should be constructed by the quality improvement team in few steps. After identifying and listing the causes of a problem (prioritized), the team will then decide to study the most important solutions to this problem. Once alternative solutions are selected, the team should then identify the selection or evaluation criteria for the alternative solutions. This step is very important, and a consensus should be reached on the list of criteria. A weight may be assigned to each criterion denoting the importance of one criterion over the other. For example, one may give cost 3 multiplier units and impact 2 multiplier units. A scale of rating each decision is selected, say 1 = low rating while 5 = high rating. Each team member is then asked to rate each decision by criterion from 1 to 5 and list the score in the related cells under each criterion as shown in Figure 3.13. If however a

Decision	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Total
1.					
2.					
3.					
4.					

Figure 3.13. An example of a decision matrix

criterion is weighted then the multiplier unit is multiplied by the weight and entered in the cell. Each member adds the total scores for each decision (total of scores in each row). The totals for each decision from each member are added up to get a team total for each decision. Those decisions that get the highest number are those that are rated highly by the team for further study and possible implementation.

Decision-making matrices are helpful in selecting an acceptable decision. It shifts the burden of responsibility of decision-making to an interdisciplinary group of individuals and away from bureaucracies. It instils confidence and pride in team member as it provides them a sense of responsibility and assures them a role in the decision-making process of an organization.

Conclusion

This section has presented an overview of the more common tools and techniques used by quality improvement teams to manipulate data and transform that data into meaningful information. The list of tools that can be used to meet this objective is even longer than presented above, but we believe that these tools are the most widely used ones. The reader is encouraged to seek more information on the subject. The objective of quality improvement tool is to support organizations achieve improvement in the most rational and cost effective method possible. Use of statistical thinking according to Deming (1986) will identify causes of process variations and will lead us to ways to reduce variation. Statistics in quality management tells us that the results of a process is not necessarily equal to the summation of all the factors composing it but it is the result of the synergistic interaction of these factors with each other. Applying statistical principles to process improvement will eventually decrease waste, eliminate rework and duplication and increase efficiency.

Developing quality improvement awareness programmes

Quality awareness programmes require both human and physical resources. It is not within the scope of this manual to discuss in detail all of

the aspects of such a programme. However, it is important to recognize that unless there are a plan and objectives in place for the awareness programme to be initiated, then all of the efforts will be lost. In the authors' experience dealing with different countries and situations, a training and awareness plan should be developed before the programme starts. The plan should identify the objectives to be achieved, the targeted participants, the trainers/ presenters, resources needed, logistics, timetable, evaluation criteria and so on.

Quality improvement awareness topics should as a minimum include the following:

- general quality terminology
- methods and models of quality improvement
- tools and techniques of quality improvement
- data management in quality improvement
- team building techniques
- coaching and leadership skills
- evaluation and assessment methodologies.

Again from experience, it has been found that the best method for adults to learn is the workshop method. Practical scenarios and exercises along with lectures and discussions should be the mechanism by which these programmes are be organized and delivered.

Another important consideration is the objective of identifying trainers from the start and developing their capabilities to meet local needs. Also, awareness of tools and techniques should only be delivered as needed and on time when teams are built.

Facilitators are extremely useful in this process and beyond as the organization become more involved in the activities of process improvement. These individuals should again be identified, trained and prepared to assume their roles as teams are developing and processes are being considered for improvement activities.

Awareness programmes require the active involvement and support of the administration of an organization. Commitment of the leaders and the participants must be ensured from the beginning for the programme to work.

Organization for quality improvement

We have to spread the main ideas, scope and concept of quality improvement to the people whom we are dealing with in the primary health care settings. This is very important to put in writing, with their participation and agreement. The framework for the future, will include: what is the main goal of the quality improvement programme, what is the mission, what does our vision mean, how do we predict our future, who will, and how we are going to lead the people towards serious and committed participation.

The mission is defined as a statement that identifies, in broad terms, the purpose for which an organization exists. It specifies the unique aim of an organization and differentiates it from other organizations. It is the foundation for all organizational planning and is determined by the governing body.

Objectives are considered to be statements of the results that a health service organization seeks to accomplish. Objectives give direction to the entire health service organization and are established by the governing body. Often expressed in broad terms, organizational objectives, when accomplished, result in mission fulfilment. Thus, they are derived from and reflect the mission. (Longest et al., 1995).

In order to guarantee high quality health services, health authorities should plan their future steps. First of all, they should know exactly where they are located, what the current situation is, what the prevailing health conditions are, what the available resources are and what human resources they have.

The second step is to state clearly where they want to shift the current situation to. This means that the health authority should have a clear future vision, state its mission, and put forward its goals and plans to achieve these goals. Having all this clear in mind, the authority should then formulate the organizational structure for quality improvement.

The organizational chart is a diagrammatical form, or a visual arrangement, that depicts the following aspects of an organization: its major function, the respective relationships of functions, channels of supervision, lines of authority and of communication, and the positions within departments or units.

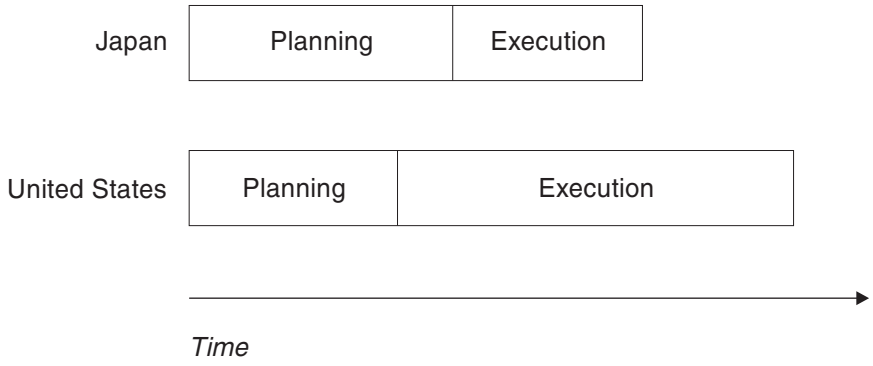


Figure 3.14. Lengthy planning and brief execution (the Japanese model) versus brief planning and lengthy execution (the US model)

Joseph Juran, in his book *Juran on quality by design: the new steps for planning quality into goods and services* (Juran, 1992), emphasizes the importance of planning in a structured approach towards quality improvement. He shows that the lengthy planning that Japan did in the manufacturing industry (compared to the US) allowed short execution of product development. The brief planning that the US did entail lengthy execution and a longer period of time in general. Cost is also affected by the depth and comprehensiveness of planning, which although costly in the early planning phases, will save a lot of material resources at later phases of implementation. (Figure 3.14).

Developing the quality improvement organizational structure

It is very important to let people know exactly where they are located in the hierarchy of an organization. This will allow employees to know who they should report to, who the leader is, what their responsibilities are and the level of authority they have. This will also prevent the interactions between different people doing different jobs and prevent people from redoing the same job intentionally or accidentally. There is no readymade organizational structure for different quality improvement settings. Each organization has its own characteristics, and for each one, a different structure should be built. Experience has shown in many countries that it is important to have the commitment of the people who are at the top of the

health hierarchy in order to gain their commitment and power. It is also advised to have a central body at ministry level that will supervise, coordinate, support and direct all the second-level and third-level quality improvement organizations.

In the ministry of health, for example, a unit or a directorate should be formed, headed by a senior health official (a physician, a pharmacist or a senior nurse). The functions and duties of this directorate may include, but are not limited to the following:

- screening and evaluating the current health situations in the country (region)
- setting, testing and communicating standards
- preparing manuals, newsletters and books on quality
- preparing and participating in the studies
- controlling the activities of other quality improvement councils
- participating in different quality improvement councils on the periphery
- providing training to quality improvement staff
- spreading the use of quality improvement techniques
- inspecting and monitoring of technical and administrative activities of health facilities.

At the same time, quality improvement councils should also be formed at the periphery, in order to implement quality improvement ideology on the ground.

A quality improvement council in a primary health care facility for example may be formed by the regional director of health (or director of the health centre), a senior nurse, a pharmacist, an administrative person, two or three representatives from the community (municipality, the mayor, a private hospital, charity or religious organization, school director, etc.).

This council has the following functions:

- screening the current health and social condition in the community
- knowing the human, physical and material resources available and allocating them
- setting plans, objectives, and priorities given the available resources
- setting the strategies and activities for implementing the plans

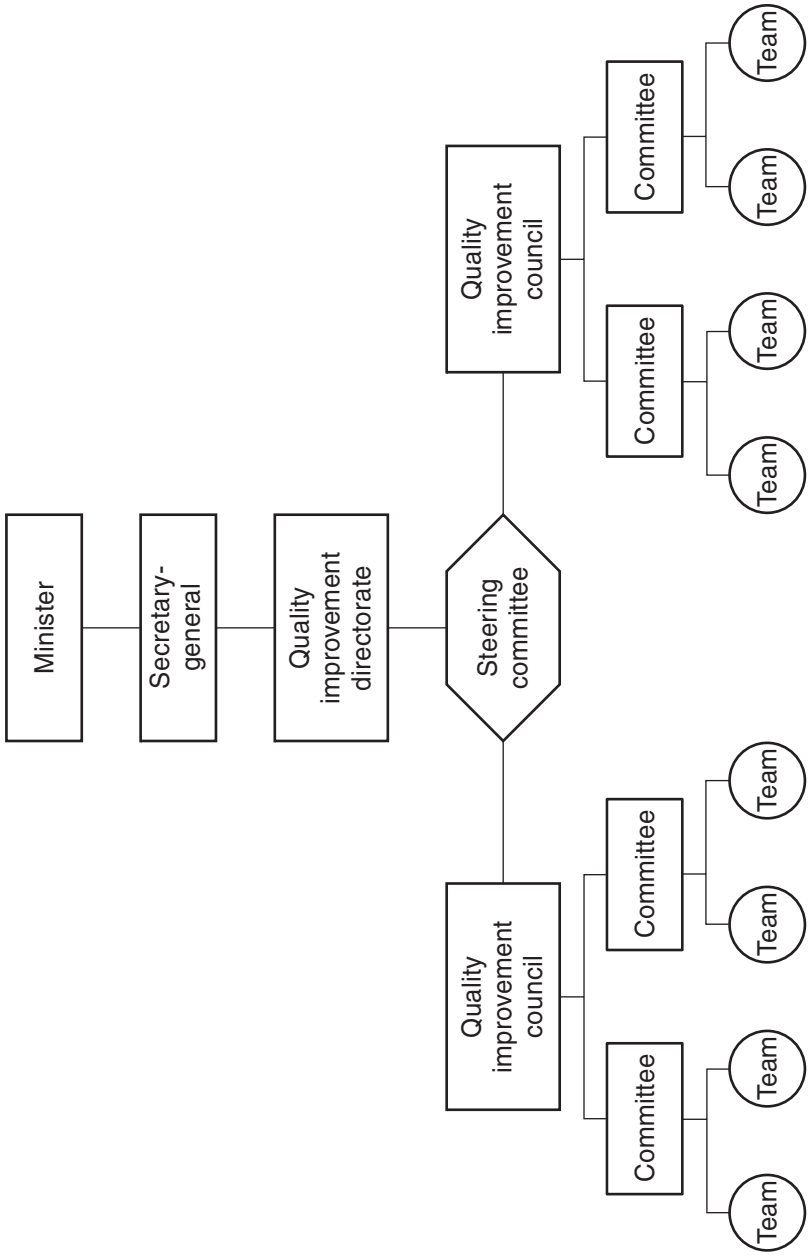


Figure 3.15. Organizational chart for quality improvement in primary health care facilities

- implementing what has been decided on
- monitoring and evaluating on a regular basis
- training whenever necessary.

Meeting regularly, these people should ensure the implementation of quality improvement principles, culture, techniques and tools in the primary health care facility. They themselves have to be well trained in these areas as well. Good communications should be established between all these peripheral bodies and the central quality improvement directorate. A steering committee may be useful for that. All the quality improvement councils' coordinators should work jointly as members of this steering committee, which should be headed by the chairman of the central quality improvement directorate (Figure 3.15).

Quality committees (or teams) and problem solving quality teams, will be formed by the quality improvement council to be the acting organs for implementing all quality activities.

Involvement of communities in primary health care quality improvement

Community is the basic focus of global health policy-makers' minds. Community involvement is the basis for primary heath care strategy. "Health for all" is a continuous process for detecting the problems and real needs of the community and to convince them of the importance of their participation and to attract them to participate actively in finding and mobilizing the material and human resources to solve problems using the resources available. It is also aiming at having all the sectors participating in these efforts, being private, public, or charity nongovernmental organizations.

When people participate in health decisions, they feel a sense of partnership and commitment towards the action they have called for. They are no more observers, but acting members, who are responsible for planning and implementing health plans for the future of their children. Community involvement means that people can share the primary health care policy decisions, not wait until they are imposed from the top down. It is also important for the people in the community to have an active share in planning, designing, implementing and evaluating the programmes, which can have a great impact on their health and future.

When people participate in improving primary health care programmes they feel basic community needs more consciously. They also become more aware of how to use the actual planning methods to overcome the obstacles they may face, and to set priorities among the long "wish list" they have in hand. When people participate in designing new primary health services of good quality, they usually actively use these services because they believe they are of their own design and they will use it proudly. The more they use the health services, the more improvement in health status we can expect. Moreover, people will perceive more precisely the areas that need improvement, and through self-critique, not complaining, they will get used to re-evaluating their previous efforts, and improve the services again and again.

People in developing countries (because of their poverty) become more and more dependent on the government in planning and providing health services. Usually they play a passive role, the so-called "critical observers' role", with little or no interest in or enthusiastic feeling of support for these programmes, because they think they are imposed from the top. In the presence of scarce resources, government planning and the non-participatory behaviour of the community are a real obstacle for health, economic and social development of such countries.

Why should the community share?

1. Health is no longer a medical matter only, but a social issue as well. Health is defined by WHO to be a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.
2. Health is affected not only by pathogens, but also by pollution generated by industry and farming, by war, by lifestyle issues that are largely determined by individuals and culture, by using substances that are strongly controlled by the laws prevailing in the country, and so on.
3. The structure (the composition) of the population pyramid is changing both in developing and developed countries. In the first group, it is shifting towards a very wide base and widening at the top of the pyramid due to improving health conditions. In the second group it is

tending towards a barrel shape, because of a low level of reproductivity, better health conditions and increasing longevity.

4. In both pyramids, two groups are important: the children and the elderly, who are non-productive dependants and have special needs. Any unmet needs here will lead to serious effects, causing imbalance in the health system. This problem is difficult to resolve, costly and may have its own effects that last for a long time, on both the personal level and community level.
5. More than half of health expenditure goes on health problems that can be prevented easily by changing people's habits and knowledge. These include preventing schistosomiasis, home accidents, female circumcision and its sequelae, smoking, alcohol consumption, and using other dangerous substances (drugs, volatile materials).This means that more than half of the responsibility lies on the community's shoulders.

How can the community share?

6. Each local health authority should have a council such as a board of trustees or community quality improvement council through which prominent community leaders actively participate in primary health care activities and programmes.
7. Even people other than those who are members of the quality improvement council should show active support for primary health care facilities and the quality improvement council.
8. The elderly should be encouraged to provide voluntary services to health facilities in their free time.
9. Schools, colleges and universities should be encouraged to volunteer as social workers, spiritual help, and so on.
10. The community can offer all kinds of material, psychological and spiritual support.
11. The community also has to have some members from the primary health care facilities sharing in the community's organizations, facilities and committees.
12. Ideas, visits and letters should be exchanged.

13. The community can provide scholarship funding and subsidies to the primary health care facility.
14. The community can provide the primary health care facilities with books, newspapers and journals to keep the people who visit these facilities busy, informed and amused.
15. Television, radio and newspapers are media through which health personnel can be invited to give interviews, lectures, discussions, explanation, teaching sessions, and so on.
16. Professionals from primary health care facilities should be invited to lecture to or actively participate in the activities of schools, universities, and places of worship. This will show not only the active interaction between community and primary health care facilities, but will also greatly influence people's attitude and health behaviour.

How can a primary health care facility show its appreciation to the community?

A primary health care facility can show its appreciation to the community by creating social activities in the primary health care facility to which key people are invited. It can list names and display photos in the facility of people who have shown real support to the primary health care facility. It can accept the active participation of the elderly in providing voluntary services in their free time.

Involvement of health personnel

The services provided for patients can be divided into two groups: the professional and the administrative. These components are complex, and although they look separate, they are mutually intertwined. The service is mainly provided by physicians and nurses, who should be good managers of their work, and who also must be managed well. If the quality or number of these professionals is wrong, then all services suffer. The same is true of management. If staff are not managed well, then services suffer.

When employees are involved in the quality process, they should cooperate with their leaders and among themselves. Cooperation is a win–win situation, while non-cooperation is win–lose. Working cooperatively within the primary health care facilities creates harmony rather than conflict,

and this will make working conditions easier for both employees and administration.

Managing health professionals is extremely difficult for many reasons. Health professionals are usually highly educated and trained individuals. They have clear vision of what they are doing and what they have to do.

By contrast with most professions, physicians are sole providers, who after examining patients, define the necessary services, and then provide these services. This is an unusual way in the demand-supply concept, for it is known that the client usually defines his demands (needs) and the supplier provides the service according to this demand. For all these reasons, and in order to guarantee a high quality service, we should have an accurate balance between the two factors: caring for and managing these professionals and caring for and managing the work itself, or what Blake and Mouton (1964) call the "managerial grid".

Blake and Mouton defined two styles for a manager's behaviour:

- concern for people (presented on the *y*-axis)
- concern for production (presented on the *x*-axis).

By plotting different combination of this behaviour on both axes, they identified five different leadership styles, depending on their position on the grid (Figure 3.16).

In position (1,1), with weak concern for both people and production, leaders do not achieve an organization's goals, because they spend minimal efforts on both people and production, and they barely keep the organization running.

Position (9,1) is characterized by high concern for production and relatively weak concentration on people. The leader tries to achieve all the organization's goals, but ignores people's needs, which will lower their motivation to work and their morale, and this will in turn lower the production level.

Position (1,9) is characterized by great concern for people and their needs and very little concern for production. This creates excellent relationships between employees and satisfaction, but at the expense of production, and the organization will not be capable of achieving its goals. This style is called the "social club" style.

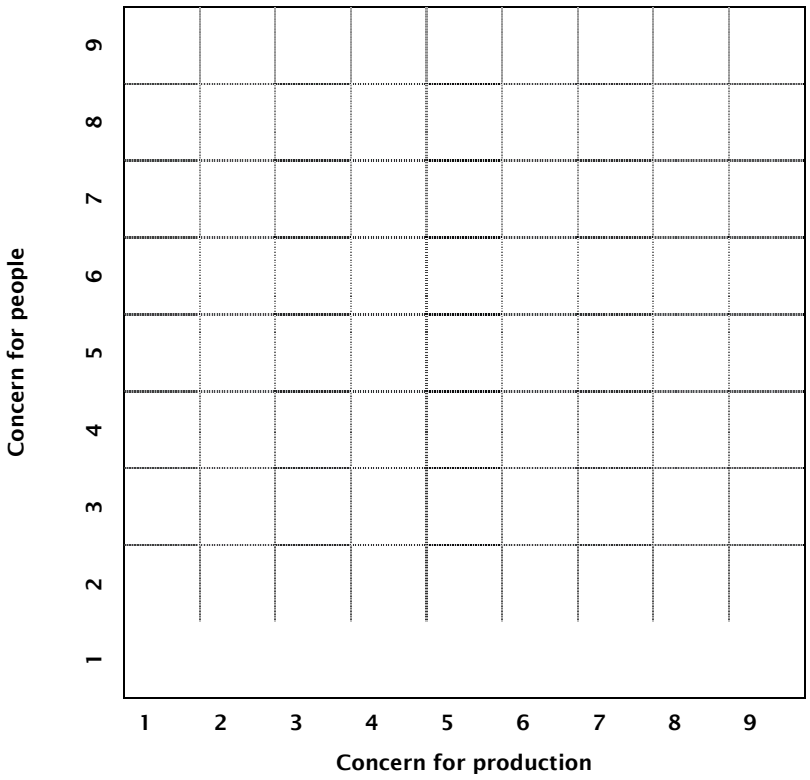


Figure 3.16. Blake's and Mouton's managerial grid

Position (5,5) shows moderate concern for both production and people. The leader tries to balance keeping the organization running effectively and employees having good relationships.

Position (9,9) shows the leader concentrates efforts on having both high level of production and achievement and excellent relationship with and between the employees.

Organizations that show these professionals respect, trust and empowerment will yield more self-confidence and improve performance. Improving work conditions also will have its effect on professionals' performance, as well as on patients' satisfaction.

Why should we involve health personnel?

1. Health services can be provided only through teamwork: the physician, the nurse, the laboratory technician, the radiologist, the dietician, as well as the clerk, the accountant, the janitor, the administrator, the housekeeper, and so on, all have their part to play. Improving health services must consider each of the specialties that are found in a health care facility.
2. With no harmony between all those who provide health services, we cannot expect any comprehensive quality service.
3. Involving health personnel in planning and providing health services is a morale booster for them. The most difficult decisions, the so-called "hard-to-swallow decisions", become easier, when the people who have to implement them are the same people who participated in the planning and decision-making.
4. When employees are involved in decision-making, they feel the job is part of them, and decisions are not merely imposed from above. They feel responsible for a successful outcome, because they have already participated in the decision-making process.
5. Employees will feel that they are not ignorant, but well respected partners who have something to say in the decision-making process, some opinion on implementation, and an effect in the outcome of the service: a healthy community.
6. Involving employees will let them work more in a better manner, not simply harder with emphasis on quantity.
7. Involving employees will lower fear thresholds: the fear of thinking, the fear of trying new methods, the fear of new ideas, the fear of the boss, the fear of the system, the fear of committing a small mistake and the fear of being ignorant.
8. Involving employees will allow the generation of new ideas from them. Any new idea must be welcomed, respected, evaluated and tested. If it is valuable, then the organization can build on it, make maximum use out of it and give some recognition to its original author. This will give people an incentive to participate and compete.
9. People in the field are directly involved in each detail; they know more than the administration does exactly how things are going, what

the pitfalls are and how to correct them. So by organizing employees' thoughts and sending them regularly on short courses on quality and problem-solving techniques, empowering them and involving them deeply in administrative decisions, they can solve most problems in the field, and even create innovative ideas for improvement.

10. On the top of all, the employees will feel the challenge, the desire to work, and the feeling of ownership, motivation and belonging.

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Chapter 4

Planning for primary health care quality improvement programmes and activities

F.A. Ameen

Situation analysis

Definition and rationale

If we need to know how much change has taken place, we need to know the situation before the change. A situation analysis gives us the information we need. There are several tools which can be used to describe the situation, but the most important aspect in the analysis is the areas to be selected for quality improvement, or those that would be affected as an impact of specific intervention.

Domains of quality improvement

The following are examples for quality improvement at community, service delivery and management levels.

The community

Improved access to health care

The factors that might act as an obstacle to obtaining health care can be studied.

Improvement of user satisfaction

This can be evaluated by using several tools, one of which has been developed by the WHO Regional Office for the Eastern Mediterranean and been used by some countries in the WHO Eastern Mediterranean Region after translation into Arabic; it can also include job satisfaction as another dimension for provider satisfaction.

Service delivery

Improvement of the appointment system

Many indicators can be selected to measure the performance and application of an appointment system; for example the number of patients with appointments compared with walk-in patients: the change in this ratio will indicate the extent of the use of the appointment system.

Management

Improving the referral system to secondary health care

Data on numbers and types of patient referred to different outpatient departments at a hospital from different health centres can be used as a bench-mark for assessing performance and monitoring progress towards improvement; the breakdown of the data by each referring physician will also be useful to inform each physician how much he or she contributes to the total number of cases referred.

Priority setting

Identification of needs

A list of areas for improvement can be created through brainstorming sessions involving all the people concerned with the health services.

Criteria for prioritization

Quality improvement team members can develop criteria for prioritization. These might include for example the relevance of the area, the urgency of the solution and feasibility.

Prioritization tools and techniques

Once the criteria for prioritization are developed, a value for each criterion can be allocated. The tool for selection will be based on listing the selected subjects or areas and comparison made according to the criteria. A table can be created such as this example:

Criterion	Relevance	Urgency	Feasibility	Other	Total
Access to health care					
Appointment system					
Referral system					

The team members score each area, and thus the highest score is selected as a first priority, and so on.

Defining objectives and targets

An objective is a statement which indicates what is expected to be achieved by conducting the quality improvement activity.

Setting targets at different levels

A target is a measurable milestone that measures the level of achievement for a given activity. Targets are essential to indicate the progress made by the quality project.

Development of consensus on targets

One widely used method to achieve consensus is the nominal group technique, which was described and developed by Delbecq et al. (1975) and is a very practical and efficient use of time. The nominal group technique is a structured process, which taps the experiences, skills or feelings of members of a quality improvement team. A question is posed to the group. Each member writes down as many responses as possible. The group leader asks each member in turn to state an idea from his or her list and writes it on a flip

chart placed before the group. No discussion is permitted until all ideas have been listed. Each item is then briefly discussed in an interacting group format. The participants indicate their preference for important items by rank ordering, a process which may be repeated with intervening discussion and argument. The outcome of the process is the mathematical aggregation of each member's preferences to give the group's ranking of responses to the question. The ranking can be used for priority sitting.

Standard setting

Defining major activities, tasks, indicators and standards to achieve

To interpret any data collected or find out how successful an intervention to introduce a change in care was, it is essential to describe current practice and the change that one is trying to achieve. Precise and selective statements are required against which an assessment can be made.

To define such criteria one may turn to the relevant medical literature or to experts in the field, and/or discuss criteria with colleagues and members of other disciplines and learn from them. It is important that in these discussions firmly held opinions and established wisdom can be challenged. It may also be necessary to be explicit about the values that determine some of the choices made. Skilful leadership may be required to avoid the possibility of members joining in a kind of false consensus in order to avoid confrontation with colleagues in the group.

Any topic of care or practice activity that is chosen for assessment consists of a large number of *elements* of which only a few can be selected for the purposes of assessment. The aim is to base the assessment on those elements, which are good *indicators* of care. An appropriate indicator will satisfy three conditions:

- it will be important in determining the outcome of care
- it will be measurable
- it will be something that can be changed by those being assessed.

In the study of diabetic care, fasting blood glucose is an acceptable indicator because it relates to risk, its reduction is effective in reducing that

risk, it can be measured, and it can be modified by the clinical control of diabetes. In auditing access, the waiting time to be given a routine appointment is related to the humanity, effectiveness and perhaps the equity of care, and it also can be measured and modified.

Indicators identify the elements of care to be examined. They do not necessarily provide satisfactory yardsticks for assessment. Donabedian (1982) suggests that an element needs to be defined so precisely that it is possible to say whether it is present or absent. An elements defined very precisely can be referred to as a *criterion.*

In diabetes, control of the level of fasting blood sugar (FBS) is an indicator, but "is FBS below 140 mg/dl" or "is FBS below 110 mg/dl?" are examples of criteria. In assessing access, the number of days' wait for an appointment is the indicator; that a patient should not have to wait more than two days is a criterion.

The advantage of defining a criterion precisely is that it is then possible to measure the extent to which that criterion is achieved—the *level of performance.* Thus, one might find, or set, a target that 80% of diabetic patients on treatment have a FBS of less than 140 mg/dl; or 90% of patients can get an appointment in less than two days. One can then say that a *criterion* together with a *level of performance* in attaining it indicate a *standard* for that element of care.

This definition of standard is one that increasingly is being adopted. Black (1990) writes "standards refer to the level of compliance with a criterion"; Difford (1990): "criterion and performance together constitute a standard"; and Donabedian (1986): "a precise, quantitative specification of the state of the criterion". Marinker (1990): "performance that the auditors have set themselves to achieve"; the North of England study (1990): "statement of what a doctor's performance ought to be".

Target standards reflect *intended* quality of care. So *achieved* standards would reflect *delivery of* quality of care.

The US Institute of Medicine defines standards as "authoritative statements of 1) minimum levels of acceptable performance or results; 2) excellent levels of performance or results; or 3) the range of acceptable performance or results". The language of standards can be confusing jargon. Standards sometimes refer to *protocols.* Standards themselves can contain

flexibility in as much as they are often expressed as a percentage of an ideal criterion**.** Thus a criterion might be that all patients with diabetes should have their weight measured every three months, but accepting that physicians work in the real world, the standard might be that 90% of patients with diabetes should have their weight measured once every three months.

An important feature of standards is that they are usually written down, so that when performance is reviewed there can be no mistake about the criteria against which they are to be compared.

Creating standards

One of the main characteristics of audit is the monitoring of performance against some standard with a view to implementing change. There are some rules that should be followed when determining standards. The first rule of standard setting is that standards must be explicitly described on paper to guard against self-deception. This is not an easy task but it ensures that any standards so described are open to criticism and debate. The second rule is to choose a viable topic, as many clinical problems cannot be addressed by interventions supported by scientific evidence. So topics in respect of which there is hard evidence or strong consensus are more likely to reflect the quality that is to be measured.

Types of standard

There are different forms of standard in use. They might take the form of an algorithm that sets out the precise steps to be followed at each stage of a process. Others, more like guidelines or options, might provide recommendations or rules that should be followed. Standards can also be classified into three types according to the way they were created.

Self-generated standards

This is where individual physicians carry out self-audit and generate their own standards of care. It is important that these be written down before conducting an audit, thus enabling the physicians to see in a more objective way the sorts of norms which they are setting for themselves and the standard of care they are aiming to provide.

Group-derived standards

The involvement of a group of physicians in commenting on a set of standards leads naturally to the much more common technique of preparing standards as a group.

Many of the clinical protocols or guidelines that have been prepared for use in general practice have arisen through general practitioners working in such ways. Guidelines prepared in this way have the advantage that they have been subjected to critical examination by a number of different clinicians. They are more likely to reflect commonly agreed good practice than do the views of one physician. Thorough discussion would make them more likely to be understood by all group members and to be clear and explicit. Of course it may sometimes be difficult to achieve consensus.

Standards created by experts or others

Standards may be created by experts on behalf of professional bodies as part of the functions of those organizations, which is to maintain good standards of care across their specialty. The advantage of this process that it is usually based on the most up-to-date knowledge and reflects "state of the art judgements". But the end-user might find the standards unrealistic, feel no ownership of them or consider them impossible to achieve.

Organizational structure

Levels, key players and their assignments

It is generally accepted that quality assurance conducted by external review has not been very successful, though there may be certain areas where minimum standards can helpfully be monitored by the authority. Thus in the UK, health authorities have a legal obligation to maintain primary health care quality. Such monitoring includes observation of achievement of minimum standards, and will steadily increase in number and detail in the future.

In the UK, physicians themselves started self-quality improvement within primary care or general practice; it is the most confidential form of quality improvement, but perhaps the least likely to produce change. Peer quality improvement or peer review involves groups either within practices

or between practices cooperating to conduct quality improvement of their care. This has the benefit of other professionals' constructive criticism, but when carried out between practices there may be difficulty in providing uniform data.

Medical quality improvement advisory groups have a major role to play in medical quality improvement in the UK. Although set up by UK health authorities, they have a statutory obligation to maintain doctors' quality improvement data confidential from the authority. As a result, they are in a strong position to help practices develop confidential medical quality improvement, and improve their care by means of education.

Integration of activities

Quality improvement can be carried out in the form of a cycle, of which different parts correspond to assessment and improvement of the quality of the selected topic. Quality is only assured by completing the cycle. A single quality improvement, even if it is well conducted, may not give much insight into the overall quality of medical care; ideally several quality improvements need to be conducted to cover several different aspects of the quality of care. But if adequate topics are chosen, covering the major areas of medical care and all aspects of quality—effectiveness, efficiency, humanity and equity—then a series of medical quality improvements can together move towards providing quality assurance.

Quality improvement cycle structures

The quality improvement cycle is assumed to begin with the identification of a clinical team; agreeing on certain criteria and levels of performance; observing and collecting data; evaluating information; planning care and implementing change; and, most important, repeating the cycle in order to evaluate the effect of the change intervention.

Selection of the team

Most aspects of care in general practice involve important contributions, not just from doctors, but also from practice nurses, reception and clerical staff, and other members of a wider team. If a topic is chosen for quality improvement, and all team members are involved in the process of

choosing criteria and planning the quality improvement, it will convey the message that their contribution and opinions are valued. It should also increase commitment both to conducting the quality improvement and to responding to its outcome. During these discussions the aims of care and the values that underpin them can also be shared, which will help to develop a sense of common purpose within the team. Thus the term "medical quality improvement" in primary health care is now accepted to include quality improvement carried out by any members of the primary health care team, physicians, nurses, and clerical or allied health staff.

Selection of the topic or problem

Quality improvement topics must cover a wide spectrum of medical care if medical quality improvements are to provide quality assurance for health care facilities. But things can start with a smaller subject that is important and both interesting and manageable.

The topic chosen should be interesting, important and amenable to change. It needs to be relevant, it should ideally be selected by the team members involved in the practice so that it is "owned"; as noted, quality improvement will be less likely to be successful if the subject is imposed from outside. Mere availability of data is not a good reason for conducting quality improvement; it is more important to choose the topic and find the information on which to assess it.

Agreeing about criteria and levels of performance

Agreeing and defining criteria are important to measure the extent to which those criteria are achieved, which is what it means as the level of performance.

Observing and collecting data

"Not all that counts can be counted, and not all that can be counted counts" (Platt 1967): the level of performance of some criteria (for example, blood pressure control) can be measured or counted, while others (for example, the exploration of patients' ideas about their problem during a consultation) can only be judged from observation or patient reports. Both

are valid indicators of quality, and the issue is whether the measurements or judgments can be made reliable.

Evaluating and verifying the information

It is important to check that the data on which the practitioner is about to base care decisions are valid and reliable. This does not mean that it has to be collected with the rigour required of research, but it must be of adequate quality to justify change. The data therefore need to be complete (or be based on an adequate sample); the collection method should be reliable; and any sampling must be unbiased.

If targets have previously been set in the practice, then performance can be compared with them and either change can be made to improve care, or the targets may need to be altered to be more challenging or more achievable. If targets have not previously been set, this is the time to use a combination of current performance, local comparisons, expert opinion and the literature to set them.

The positive results of the quality improvement should be discussed first: individuals should be asked to comment on their own performance and acknowledge their own weaknesses themselves before colleagues comment, and any problems should be discussed not as criticism but as indications for constructive change. Adhering to these rules has proved to be very beneficial in maintaining motivation. Open acknowledgement of deficiencies, particularly by the doctors in the team, encourages open communication and the acknowledgement of difficulties by other team members.

Planning care and implementing change

The ultimate goal for quality improvement is improving patient care and it therefore depends heavily on effort to produce change; yet many quality improvements currently carried out in practice omit the crucial stages of implementing change and setting targets.

Delivery of care depends on four main factors: knowledge, skill, attitudes, and systems or organization. Ashbaugh and McKean (1976), in a survey of 5400 patient records, showed that 95% of deficiencies were due to failure of performance rather than of knowledge. Following any evaluation,

which reveals failure to achieve target standards, the first question to be asked is whether changing the system of care will remedy the situation.

Repeating the cycle

An advantage of the cyclical nature of quality improvement is that before each phase of data collection there is an opportunity to review the criteria and target levels of performance. No part of the quality improvement cycle is more important than any other part, and the cycle may be entered at any point. For this reason, no item is put at the top of the quality improvement cycle diagram. In practical terms most practices will begin by planning care ("patients do not seem to be getting appointments easily enough: let's redesign the appointment system"). The next most likely entry point is observing practice and collecting data ("patients do not seem to be getting appointments *easily* enough: let's measure how long they have to wait"). It is relatively uncommon for a practice to begin by setting a standard ("patients don't seem to be getting appointments easily enough; we believe no patient should wait over two days: let's find out how many do").

Conversely, the advantage of the cycle is that, wherever one may enter the cycle, one will eventually be challenged to undertake each step.

Quality improvement and feedback

Many studies concerning the effects of quality improvement and feedback on performance have yielded positive results (for example Nelson, 1976; Frame et al., 1984; Fleming and Lawrence, 1983; Berwick, 1986, Fowkes et al., 1986; Winkens et al., 1992). Rosser (1983), for instance, asked 30 general practitioners to estimate how much diazepam they prescribed and subsequently provided them with feedback and actual figures. This led to a decrease in the number of prescriptions. Quality improvement of patients' records and feedback on test ordering resulted in a change in performance (Martin et al., 1980).

Fleming and Lawrence (1993) provide an example of practice activity analysis, which starts with the collection of data (in this case about preventive care), after which differences in practice were used as the starting point for small group discussions, which led to the development of criteria

for future practice. This method has been shown to be capable of producing change in preventive care where the criteria are relatively non-contentious.

In a further study doctors developed criteria for the adequate management of cystitis and vaginitis and after performance they received feedback. This led to an increase in compliance with the criteria. Norton and Dempsey (1985) and Gehlbach et al. (1984) provided physicians with feedback on prescribing and with information on alternative and less expensive solutions. The experimental group in this controlled study had an increase of 46% in prescribing the recommended medication.

Various studies point to the importance of individualized feedback that is focused on the behaviour of the individual care providers. Winnickoff (1984) compared three approaches aimed at improving the screening for carcinoma of the colon, namely continuing medical education, group feedback and individual feedback. The last intervention yielded the greatest effect. According to the authors this was partly due to the subjects' wishing to perform as well as or better than their colleagues. Most people dislike achieving less well than those with whom they compare themselves. Sommers et al. (1984) compared individual feedback with the effects of formulating criteria as a group with mutual discussion of quality improvement results. Individual feedback turned out most effective. Personal, individualized feedback reports by a respected specialist on test ordering by general practitioners, with information on the volume and the quality of the decisions made, resulted in a very considerable reduction in ordering of tests (Winkens et al.,1992).

Anderson (1988) reported on a group of general practitioners that studied their prescribing of digoxin and created a protocol, which was distributed to their practices. They re-evaluated their performance one year later. There had been a significant improvement by those carrying out the quality improvement, but not by the other physicians in those practices. Similar reservations about the effectiveness of quality improvement have been expressed in a number of other reviews (Mitchell and Fowkes, 1985; Baker, 1991).

The conclusion from these studies is that feedback of information on clinical practice was most likely to influence clinical practice if it was directed to doctors who had already agreed to review their practices and who

were actively involved in setting standards and discussing their performance. Feedback was also more effective if it was immediate and repeated.

Thus quality improvement and feedback may be influential. However, there are also doubts about their effectiveness. The results seem to be less positive when the feedback is not provided regularly or maintained for a protracted period (Fowkes, 1982). In some studies no effects were found (Grivell et al., 1981; Schroeder et al., 1984; Wones, 1987; Parrino, 1989). Feedback on the cost of laboratory use in a controlled study did not have any effect on behaviour (Cohen et al., 1982). Everett et al. (1983) examined the cost of ordering tests and compared feedback alone with chart quality improvement, feedback and group discussions about performance. The first method did not lead to changes; the second was more successful. Grol (1988) described the effects of an intensive structured programme of peer review on the behaviour of general practitioners. After taking part in the programme their work conformed more closely to a number of criteria for good general practice care, including aspects of their consultations and prescribing, and the greatest change occurred among general practitioners who previously conformed least with the established criteria.

So in summary, feedback is most effective if it is personal or individualized, continued over a protracted period or given by respected colleagues and if the feedback is part of a more comprehensive peer review process.

Quality improvement must be the goal of medical education and service delivery: medical quality improvement is the activity that underpins such improvement. Understanding the nature of quality improvement is the essential first step in assessing its potentials and dangers, learning how to set about it, and undertaking quality improvement in practice.

Quality improvement is not the same as research, but the techniques of the latter can often be used to illuminate the former. Quality improvement is all about change: change for the better in a purposeful manner. It need not be a negative statutory requirement; it can be an extremely powerful weapon from which all can benefit. Probably the most difficult part of all will be introducing and maintaining any changes that have been shown to be needed. A little thought, moderate tact, universal involvement and open and continuing discussion greatly increase the likelihood of success.

Action plans

What is an action plan?

An action plan is a list of steps to be taken by the resources people using the available tools, described in a schedule form; it can also include dates or times and the persons involved or assigned to the activities at those times.

How to develop an action plan

The development of an action plan requires revision of all the required activities or tasks and identification of the persons involved in implementing each task with an estimate of the time required to achieve it. Several tools to represent action plan have been developed; one of the most useful tools is the Gantt chart, which is a tool that represents graphically the order of various tasks and their duration. A list of activities are listed along one column of the chart and each is identified with its starting date and completion date choosing from the list of months on the top row. This tool is very useful for tracking an activity and monitor its progress.

Medical quality improvement and quality

The purpose of clinical quality improvement is to improve the quality of care. At the primary care level several aspects such as the premises of the health centres, the human resources, the diagnostic resources and the time available in each consultation may have an impact. But the current approach to quality improvement promotes the use of clinical standards or guidelines and subsequent monitoring to assess quality of care, with the aim of reducing inappropriate variation. As this process has developed it has become evident that considerable effort and skills are required to develop and implement local clinical guidelines.

Guideline-derived evaluation tools are not intended to provide data that will promote rigid adherence to a specific way of providing care, but should serve as a mechanism to evaluate overall quality of care. Guideline-derived performance measures are tools for providing data related to quality of care. How the data obtained from applying these tools are used should depend on what is known about the clinical practice guideline, the accuracy

and reliability of the data, and the confidence intervals for the data. In some cases, it may be possible to reach 100% compliance with guideline recommendations; in other cases it may not. Guidelines and the evaluation tools derived from them allow for clinical judgment.

The traditional approach to quality assurance is management by exception, in which one responds only to failure or deviations from agreed criteria. A more advanced approach is to set targets and to monitor the extent to which these are achieved. Berwick (1989) describes what is called "total quality management", where the whole team is committed to continuous monitoring and improvement of their own contribution to the quality of service by making changes as and when required. The important component of this approach is the involvement of the whole team, integrating quality improvement into everyday practice and management, and continuous monitoring and improvement of performance should lead to improvements in quality of patient care.

Achieving change

Theory and practice

There are four main theoretical models of change that can inform practical strategies, as discussed below.

Social influence model

The social influence model suggests that group behaviour takes precedence over applying the information as individuals, so habit, socially accepted norms of appropriateness and peer acceptance are powerful motivators for change. This suggests that clinicians might not adopt guidelines until they are widely accepted by their peer group.

Diffusion of innovation literature

The diffusion of literature model offers lessons based on observation of how medical innovations find their way into practice observing:

- the closed nature of most medical communities and the importance of local opinion leaders

- the dynamic nature of diffusion whereby change (modification and adaptation) occurs as part of a staged process of adaptation.

Characteristic of an innovation is its advantages for those adopting it and their patients, its compatibility with local norms, its complexity, the extent to which it can be tried and discarded and how easily expected results can be observed.

Adult learning theory

Adult learning theory focuses on the characteristics of the expected behaviour change as well as the practitioner's environment. It stresses the importance of personal motivation rather than coercion. Education and consequent learning contribute to predisposing practitioners to change and reinforcing change once it has occurred; they rarely enable the actual change (Green and Eriksen, 1988).

Marketing approaches

Marketing approaches are drawn from the field of advertising and the literature on persuasive communication. This suggests five attributes of communication: the *source*, the *channel* of presentation, the *content* of the message, the characteristics of the *audience*, and the *setting* in which the message is received. They also suggest that there is a difference between communication that increases awareness and communication that actually brings about change. To bring about change the focus should be on 'influential' sources, personalized interaction as the channel, local anecdote or experience as the message, opinion leaders as the audience, and an informal environment as the setting.

Accommodation and motivation

So how can change be accommodated and how can others be encouraged to change?

Be involved

The most basic requirement is for all those likely to be affected by changes to be involved in the quality improvement process. The process of

creating protocols or guidelines will improve care only as long as they are adhered to in practice. The chance of this occurring will increase if those involved in the delivery of care are also involved in planning and in agreeing the criteria for the quality improvement. Guidelines can be developed by either internal groups composed entirely of the clinicians who will use them, intermediate groups, including some of the clinicians who will use them, or external groups, none of whom will use them (Grimshaw and Russell, 1993a). Involving the potential user in the development of a guideline can develop a sense of ownership, and early involvement can enhance motivation and teamwork, and eventually improve the care provided to the patients.

If it were found that only 10% of hypertensive patients had had their fundi examined in the past year, then requesting all partners to make sure that this is carried out and recorded at least annually is unlikely on its own to improve the situation greatly. If colleagues have been committed to the idea of quality improvement from the start through being made to feel part of all decisions and discussions, then they will have been involved in deciding what changes are necessary and therefore will be more likely to carry these through. They are more likely to have "ownership" of the whole quality improvement and so will accept the changes as being a necessary and integral part of it.

The greater the degree of involvement of professionals at all stages of guideline development and introduction, the more likely they are to feel ownership of the process and therefore the more likely is the expected behaviour change. However, of four studies that tested the effect of having end user involvement, two found it had a beneficial effect (Putman and Curry, 1985; north of England study of standards and performance in general practice, 1992) and two found it had no effect (Sommers, 1984; Putnam and Curry, 1989).

The issue of ownership is quite complicated, as the involvement in developing a guideline does not guarantee the desired change in physicians' behaviour. Moreover, some physicians will not wish to be involved in guidelines activity, and few will have the time and the required skills and knowledge to contribute to development of rigorous guidelines.

The best balance might therefore be to develop the guideline at the national level using the available resources and the expertise for the development of rigorous guidelines, the potential user being later involved in modifying them. This process of adaptation will generate a sense of ownership and would fill the gap in skills and expertise that might not be available at the local level.

Choose a meaningful topic

In this context, meaningful means meaningful for those likely to be affected by changes. The topic must be seen to be significant enough to justify any changes. The benefits must clearly outweigh the cost for those involved. It is extremely important, as emphasized earlier, that the choice of topic be made with the full agreement of any practice staff likely to be involved. It is fundamental to the whole operation that the process leads to change, and it must be in the light of the level of agreement that final choices are made from the shortlist.

Set suitable standards

Closely connected with the choice of topic is the setting of realizable standards. The standards must be appropriate for the particular practice since everyone starts off from different baselines. Although there may be some "gold standard" that can ultimately be aspired to, to achieve change each stage of improvement must be sensible and achievable. Failing to reach targets can be very dispiriting; the converse is equally true. While one might want 100% of patients seen within 10 minutes of their appointment times, this is clearly incompatible with an efficient use of doctor consulting time. However, if your quality improvement shows that only 20% of patients are seen within this time period, it is possible that a standard of 50% could be reached with minor changes and 75% with some thought.

If, in the discussion of standards in relation to the management of hypertensive patients, one or more colleagues refuse to acknowledge the importance or necessity of yearly fundoscopy, then one might negotiate to persuade, accommodate to proceed, or recognize a fundamental problem and move to another area on which agreement can be reached on standards. Similarly, discussions right at the start with reception staff about the

telephone system, their involvement in setting the standards for promptness of reply, helpful manner, and so on, will then make decisions about the necessary changes much easier. Indeed the general approach to necessary changes should be implicit in the standard-setting exercise and the choice of quality improvement topic. Setting a standard which change would be unable to attain means that the standard is inappropriate. The whole quality improvement process can be become a meaningless extra task if this part of the exercise is badly handled**.** Worse still, it might alienate partners and staff against the whole idea and make future exercises almost impossible to initiate.

Set an appropriate time scale for change

There is a fine balance between trying to do too much too soon and being so careful in introducing changes that initiative and enthusiasm are given time to leak away. The deciding factor will be the scale and type of the changes required. Again, the main prerequisite is discussion and involvement of those affected. Implicit in the quality improvement process is the requirement to measure again after instituting changes but it is important to give sufficient time for the changes to be introduced and for the changes to have any effect.

Changing the content of referral letters to reach higher standards of legibility and information can be introduced over a relatively short time period; it is mainly a change in attitude that is required and this, if the points above have been followed, should have been achieved by this stage. A further quality improvement after three months might be suitable. In contrast, changing a whole appointments system to make it more flexible, sensitive to sudden surges of demand, and so on, is a much more complicated issue. There may be several different proposals put forward to try and these may be found to be impracticable. It is often possible to experiment initially with just one clinic, or on one day a week. The need is to involve, discuss, and be sensitive to the effects that the changes may be having.

Reward success

As described above, one way of introducing change is through financial rewards. This applies at all levels of staff and need not be grandiose. A one-off bonus might be the carrot for staff, if reaching a standard results in significant financial gains for the practice. No successful quality improvement should go by without some token of recognition.

Strategies that can help implementation

Strategies operating within the doctor-patient consultation

Such strategies include providing clinicians with easily accessible copies of the guidelines perhaps in the form of posters, handy pocket pages, or a summary leaflet. Other more sophisticated strategies involve the provision of patient-specific reminders at the time of consultation. This might include placing a copy of the guidelines in the patient's folder; creating and putting a checklist, flowchart or reminder stamped on the patient's folder; or embedding the guidelines on a computer screen. Other methods include a trained nurse screening the patient's folder prior to a consultation, or reminders about previous non-compliance with guidelines placed in the notes.

Strategies operating outside the consultation

Strategies operating outside the consultation which have been used successfully includes feedback of a report on compliance with guidelines or peer review activities.

Several studies have compared different dissemination and implementation strategies (Grimshaw, 1995). Reviewing these, Grimshaw and Russell (1993a, 1993b, and 1994) concluded that "implementation strategies operating within the consultation that focus on the management of individual patients are more likely to lead to changes in medical practice. While there is little evidence on the relative effectiveness of strategies operating outside the consultation, they appear to have made a substantial contribution to the success of Guidelines when they have been employed." Lomas (1993) reviewed behavioural change theories and concluded that five types of intervention were worth further evaluation: opinion leaders,

educational outreach visits, patient-specific reminders, continuous quality improvement and mass marketing. Oxman (1994) reviewed 102 studies involving 10 different types of intervention and concluded that "all of the interventions have been shown to have some effect at least some of the time" but "there are no magic bullets for improving quality of health care, but there is a wide range of interventions available that, if used appropriately, can lead to improvements in the effectiveness and efficiency of health care".

Challenges for change strategies in research

Who actually changes?

In assessing change observed for a number of physicians it is important to note whether the standard of practice shifts towards the optimum, or change is limited to physicians whose original practice made them outliers. If only the latter change, the distribution becomes narrower and taller but the overall practice style remains the same. This type of change, in which outliers conform to the group norm, would be expected in programmes that use the influence of group process to induce change. However, reduction in rates of overuse or underuse might be due to the statistical artefact of regression to the mean.

Comparison of approach

The effect of personal individualized feedback from a clinical leader is evident in the literature on physician change. The importance of participation and active involvement by respected clinicians in educational programmes also enhances the effect of change. Incentives and administrative rules can have an effective role. However, the relative contribution of the different ways to change physician behaviour remains uncertain. The differences in the abilities of different interventions to influence different types of physician have not been worked out. Comparative analyses are needed to measure the impact of one type of intervention on the type of doctor.

Long-term evaluation

The ability of change to persist rather than decay has only recently received some attention in the literature on changing practice patterns, and a

few longitudinal studies been conducted. Reinforcement for change will be needed, in the form of continuous education, repeated feedback or ongoing financial incentives.

Cost and benefit

Schroeder (1984) has emphasized the importance of measuring whether savings from programmes that change physicians' use of services justify their expense. Although personal individualized performance feedback from a clinical leader is effective, it is also expensive, and the benefits may not substantially outweigh the costs. Cost–benefit analyses are useful for comparing the cost with the outcome in terms of quantitative measures. Cost–effectiveness analysis on the other hand is for comparing the cost of an activity or task and its outcome(s) from a qualitative standpoint.

Health outcome

The effect on the health outcome of patients of the intervention and changes introduced should deserve attention. The question is whether it is worthwhile in comparison to the effort spent to produce the change. The outcome effect is difficult to measure with observations and interviews of patients. Further work will be needed to develop instruments that can be reliable and valid to determine changes in the health status of patients resulting from interventions aiming to change physicians' practice patterns.

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Chapter 5

Implementing quality improvement activities in primary health care

T. Khoja and M. Basulaiman

Training and quality improvement awareness

> A student does not learn what was in a lecture or book. He learns only what a lecture or book causes him to do.
>
> E.L. Guthrie, 1942

> The passage of time does not guarantee that an individual will acquire more wisdom, skill, proficiency or effectiveness.
>
> David Schwarts, 1980

Assessment of educational requirements

Trained people are the key to the infrastructure of quality improvement. Organizations cannot function without people. However without the right kind of trained people, an organization's resources will be misused, if not wasted. In order to provide potential and actual quality improvement personnel with the opportunity for developing their knowledge and skills, training in quality improvement should be directed towards the needs of the organization and the trainees. The trainees should be trained for the tasks they are expected to perform. The overall objective of training in quality improvement should be to help trainees understand clearly their roles

with regard to the contribution that quality improvement can make to primary health care, and to assist them in acquiring the knowledge, attitudes and skills necessary for their jobs.

The training curriculum should be focused in order to develop knowledge, skills and attitudes that are relevant to the priority tasks that must be performed to meet the quality improvement needs of the community, the organization and the individual. In order to achieve this goal, educational planners must learn to collaborate with health planners, health staff, community representatives and trainees in order to identify educational requirements. The real success of total quality is to integrate people and technology—processes and equipment. The training and development focus will be on the tools and skills necessary to create competitive advantages in the employees. A key aspect of the staffing function is developing the abilities of the staff and managers so that they can perform their activities with maximum effectiveness. The overall goals of staff and manager development are to expand their knowledge and intellectual skills, to strengthen their practical skills and to improve their attitudes and communication skills. Providing the trainees with the education they need to carryout their responsibilities is fundamental to achieve an organization's mission. For that reason, Korten (1977) suggests that this potential can be readily developed if a few simple but important principles are applied:

- training should be treated as an important management tool and be integrally linked with an organization's other management system
- training should be designed to develop the specific attitudes, practical and intellectual skills required for effective job performance
- the work practice setting during training should be as similar as possible to the job setting
- training should focus the participants' attention on the results they should be trying to achieve and help them relate their work to those results
- the training should actively involve the participants in their own learning
- training must develop the participants' desire to learn
- trainees must feel committed to the training goals.

Leaders need to consider a number of factors when defining educational requirements. These factors may include the following:

- an organization's mission
- common problems and deficiencies
- the available resources and technology
- community expectations and needs
- identified learning needs of staff
- previous experience.

The attitude in most organizations is that education takes place to satisfy organizational needs, and although this is very important, educational programmes must also satisfy the needs of the trainees as individuals. Neglecting this important aspect may lead to serious consequences, including lack of interest, motivation and productivity. Moreover, educational programmes are usually planned to meet recent organizational needs. Although this is also very important, educational programmes must give similar attention to meeting the future needs of the organization and the trainees as individuals. For the identification of the educational requirements to be realistic and sound, it is necessary to consider the predictions of the future environment of the organization including the social, economic and technical perspectives.

It is important, however, to differentiate between the perceived needs and the real needs. To elaborate on this problem Juran (1989) gave an example of an individual whose mentioned need was a new television set, while his actual need was entertainment. Blake and Mouton (1972) stated that the response to educational needs on the basis of feelings and common sense and not according to real needs was the main problem facing educational planners. It is important to discover what is behind the mentioned needs and to understand the actual true needs. In general, the process of the identification of the educational needs consist of three main steps:

- preparing a list of the beneficiaries of the educational programme
- identifying the actual needs of the beneficiaries
- prioritizing the actual needs according to importance.

The beneficiaries

Organizational needs

It is important to understand that organizational needs might influence the selection of the trainees, as well as educational requirements.

Group needs

The identification of group needs is easier than the identification of organizational needs. Analysis of group needs results in the identification of the need for training on the skills of leadership, communication, problem-solving and planning.

Individual worker needs

The identification of the individual worker needs is considered to be easier than both the organizational needs and the group needs. The individual worker needs can be identified by the analysis of the education, training, experience, skills, knowledge, motivation and previous performance.

Job needs

The identification of the job needs may be easy or difficult according to the type and level of the job.

Identification methods for educational requirements

There are a huge number of available methods for the identification of quality improvement educational requirements. Here are some of these methods.

Surveys

Although surveys cannot determine educational needs directly, they are useful in motivating all those involved and ensuring their cooperation and full participation.

Questionnaires

Questionnaires are a popular way of collecting data on educational needs. They are characterized by simplicity, the short time they take to

perform, the huge amount information they can collect and the large number of participants that can be involved, in addition to their relatively low cost.

Knowledge, attitude and skill tests

Although knowledge, attitude and skill tests can be very accurate and reflect the exact educational needs, their high cost may limit their use.

Product evaluation

This implies the analysis of the worker's performance using some of the quality assurance tools.

Performance evaluation

Nominal group technique

Job description analysis

Group discussions

Interviews

Advisory committees

The committee should represent all levels of administration (supervisors, mid management and top management) and it may include external experts to identify the needs and prioritize them.

The selection of the appropriate educational requirement identification method might be based on the preferences of the organization regarding some of the following factors.

- cost
- extent of participation
- available time
- extent of information needed
- type of information needed
- simplicity.

Development of a training plan

Planning is the process of deciding in advance what to accomplish and how to accomplish it. Development of a training plan provides a shared understanding of the activities, and reduces overlap and wasteful activities.

The plan should include a brief overview of expected training outcomes, groupings of instructional objectives by units or lessons, and an agenda showing the sequence of units and the tentative allocation of time among units. The plan should specify what will occur during each unit, the form of that activity, and what the accompanying guidance and feedback should emphasize. As appropriate, the plan should indicate what materials and media are needed for each unit. The training plan begins with an understanding of the training goals. From the training goals, specific objectives can be established. Then tactical and operational plans can be developed in order to accomplish the objectives. The training plan should state the means that will be used to reach the objectives. It is a framework that details the methods and tasks involved in achieving the goal. The training plan identifies training actions or activities that will be taken by certain people within a stated time frame. The training development plan is not a content outline. Instead, it is a recipe for preparing the training materials. The training development plan should be complete in order to allow courseware development, the next phase, to proceed smoothly.

- *Task* identifies one of the tasks from your approved task list.
- *Indicator* specifies the performance outcome expected at the end of training on this task.
- *Objectives* are the list of instructional objectives to be accomplished during training on this task (10 or 20 objectives may be needed for each task; only sample objectives are included in this list).
- *Practice* outlines the practice participants will receive during instruction on each objective (when appropriate, practice on several objectives can be combined).
- *Guidance* describes the information, demonstration, or other assistance you will present to participants prior to practice.
- *Feedback* specifies how feedback will be provided to participants following practice.

For the purpose of organizing training standards in this manual, training has been divided into the following six elements:

- the participants (trainees)
- the trainer
- the training centre
- training methods
- training materials
- training evaluation.

The training plan should be based on the careful analysis of the training environment, including:

- training venue
- training contents
- learning materials
- training methods (training objectives, schedule, list of resource persons, list of participants, administrative information, session materials and daily evaluation forms)
- training technique
- training timetable
- training costs
- the trainees (their number, knowledge, skills and previous experience)
- the trainers (their number, experience and abilities)
- supplies and equipment availability.

The training room should contain at least the following:

- table and chairs to accommodate the group, resource persons and materials
- small tables for projectors and video equipment
- flip chart easels (one for each table)
- overhead projector
- slide projector
- screen for projector
- video equipment
- extension leads and plugs
- drinking glasses and jugs for water.

The secretarial support room should contain:

- desks or tables and chairs for secretaries
- photocopying machine with sorter
- tables for storage and assembly of materials
- computer/word processor and printer
- staples (at least one heavy duty and two light ones)
- scissors (at least two pairs)
- paper puncher
- rulers and pencil sharpeners.

Consumables include:

- overhead projector transparencies (200 sheets)
- overhead projector transparencies for photocopying (100 sheets)
- thick felt-tip marker pens—at least three colours (black, blue, red) per flip chart easel
- two spare bulbs for overhead and slide projector
- writing pads for each person with 25 spare
- ball point pens for each person with at least 25 spare
- name tags
- one set of marker pens for use with transparencies per group and one for resource person
- staples of the appropriate type
- 10 reams of photocopying paper
- 10 bottles of correction fluid
- cellulose tape (three small and one large roll)
- toner for photocopier
- envelopes and other office supplies.

Training objectives

Training objectives can be derived from the organizational mission, the training needs assessment and the specific job descriptions of the trainees. The effectiveness of the training effort depends largely on how the training objectives are selected and phrased. Training objectives are considered as the cornerstone of the whole training activity, and all the remaining steps of the planning process depend on it. Good and clear

training objectives facilitate communication between the trainers and the trainees. They direct educational planners to select appropriate training methods, means and contents.

Content selection

Training contents are the training knowledge or subjects that will enable the trainees to accomplish their designated job and achieve the stated objectives of the training process.

Setting-up the training activity

The coordinator and support staff should attempt to set-up the workshop facilities, a full day in advance to allow for any unforeseen difficulties to be rectified.

The working style of the workshop should probably be one of following three options.

Option 1, “group style” (Figure 5.1a), is preferred for most workshops. It sets an informal tone, allows for relative equality among participants and resource persons and facilitates individual and group participation.

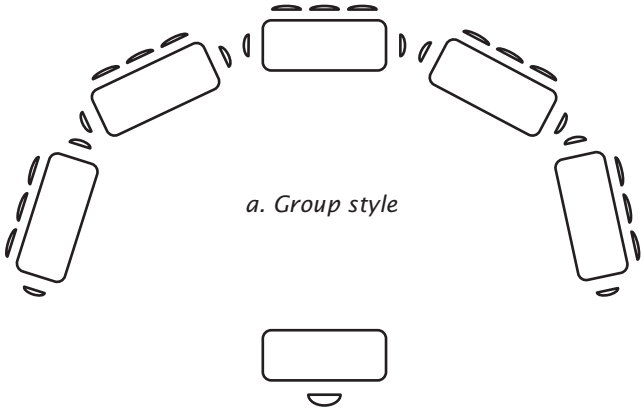
Option 2, “conference style” (Figure 5.1b), sets a somewhat formal tone but puts every one on more or less equal footing, including the resource persons and participants.

Option 3, “classroom lecture style” (Figure 5.1c), is usually not appropriate. It sets a formal tone and create distance between resource persons and participants; interactions among participants also are inhibited.

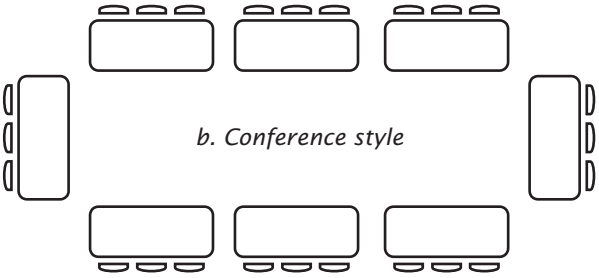
Steps in content selection

It is advisable to follow these steps in selecting and deciding the contents of the training process:

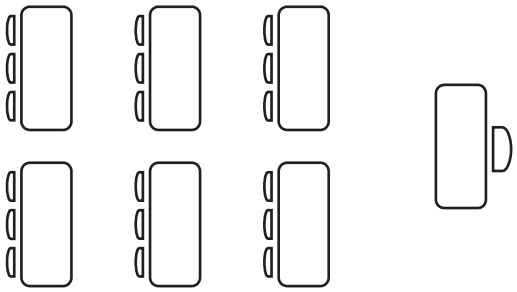
- examine every training objective and prepare a list of the subject outlines
- prepare a detailed description of the contents of each subject outline
- eliminate any unnecessary duplication
- review the training objectives and the extent to which the content outlines fulfil it
- adjust any necessary changes.



a. Group style



b. Conference style



c. Classroom style

Figure 5.1. Options for workshop layout

Training methods

The training venue, contents, costs, time and facilities, as well as the nature of trainers and trainees all together lead to the preference of certain type of training methods over others, in order to achieve the training objectives.

There are huge lists of training methods. Here is a list of possible methods, some of which are discussed below, that can be used in quality improvement training:

- lectures
- group discussions and tutorials
- demonstrations
- brainstorming
- case studies
- role-play
- conferences
- study assignments
- field visits
- workshops
- on-the-job training.

Lectures

Lectures are the best method for transmitting factual knowledge to a large group. They are efficient and cost-effective when they are a synthesis of up-to-date information. They are no good for teaching skills or exploring sources, feeling and attitudes. Transmission is one –way—from teacher to student. The audience can be involved through question and answer sessions.

A lecture's effectiveness depends on the organization of the talk and the presentation style. It should have three parts: an introduction, main body and conclusion: tell the audience what you are going to tell them (introduction); tell them (body); and tell them what you have told them (conclusion). Organized repetition will increase the probability of your audience's retention.

Lectures can be made interactive through questions to individuals or all the audience (answers by show of hands). Handouts can be used to

reinforce the message, and short sessions working in pairs or small groups can stimulate involvement.

Group discussions and tutorials

Group discussions are helpful in problem-solving and exploring (changing) attitudes (see Figure 5.2). The proper use of questions is important. Closed questions require specific answers and check knowledge; open questions are used to formulate hypotheses, support opinions and evaluate choices.

Discussions are useful when the goal is problem-solving. The process used in arriving at a solution is as important as solution itself. A discussion should be carefully planned and organized, with questions prepared in advance. One should begin with closed questions to reinforce facts and

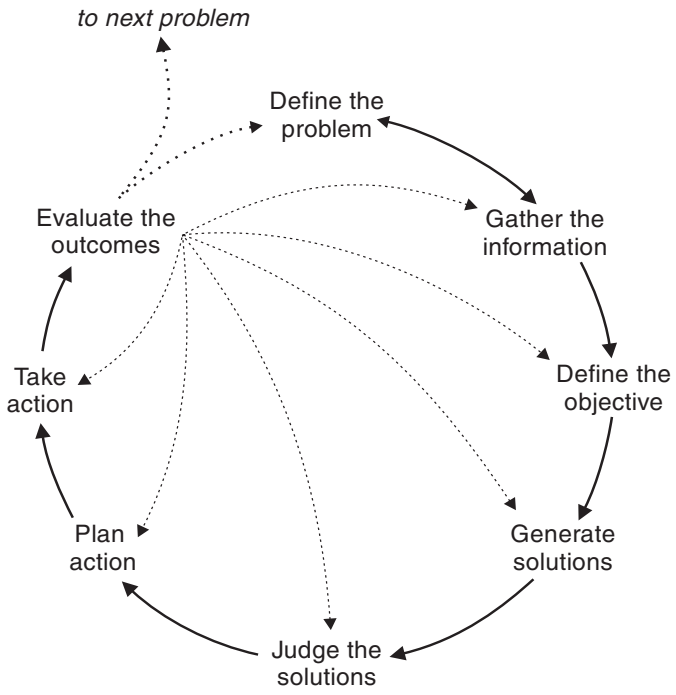


Figure 5.2. A framework for group problem-solving

concepts. It is not cost-effective to be totally fact-centred, however, and most of the discussion should centre on open questions. At most, about 20 participants should take part. Group leaders should be briefed for consistency.

There are various structures for group discussions. In a *seminar*, a paper is presented by one member of the group and discussed by all participants. In a *tutorial*, the group discusses material which has been presented elsewhere-in a lecture, or via a reading list or in a preliminary handout. In a sequential discussion, the group works through a series of questions or topics planned in advance by the tutor. This parallels the logical development of an argument in a lecture.

In any of the sessions described above, the group may be divided into smaller groups for short periods of time. In a "pyramid", pairs of students discuss an issue and then meet another pair, in a group of four, to share their conclusions. In larger groups this process of combination may continue with subgroups of eight. "Buzz" groups are small groups formed to help generate ideas and produce key points for further discussion. A short time—2 to 5 minutes—should be allowed.

Demonstrations

In a demonstration, some students or a group of students may demonstrate a procedure or carry out a role-play or simulation to provide a focus for discussion. The facilitator's responsibility is to:

- prepare the necessary equipment
- explain the purpose of the demonstration
- go through steps clearly and slowly
- explain and answer questions at every step
- summarize and discuss steps
- volunteer to demonstrate to others
- encourage questions and discussions.

Brainstorming

In a brainstorming session, the facilitator:

- poses a question
- asks trainees for answers
- notes answers as they are given without comment.

He or she encourages everyone to answer, and the group organizes answers according to importance.

Before the session, the facilitator must:

- prepare questions on the subject
- ensure that there is enough space on the board/flip chart
- explain that there will be no discussion on receiving responses
- record each response once
- explain unclear statements
- ensure that everyone agrees on every point.

Case studies

Case studies are used for developing problem-solving skills. Problems can have definite solutions or be open-ended. A case study can be a starting point for a discussion. Actual problems may be documented and studied

Role-play

Role-play is useful for developing communication and teaching skills. It prepares trainees for real situations. It helps trainees gain confidence in facing real situations and develop decision-making skills. Human relations are enhanced.

For an effective role-play, a facilitator should:

- identify training objectives
- collect facts, typical incidents and problem situations related to objectives
- describe the background and setting of the role-play
- write instructions for each of the roles
- write brief notes for participants to observe
- prepare notes to guide discussions after the role-play
- prepare a realistic scenario
- select and brief participants and observers
- have participants act out their roles
- have the next group repeat role-play.

In a well established group, all of the participants can take part in a simulation or role-play to encourage them to experience the thoughts and feelings of others.

Delivery of task-based (on-the-job) training

Training is usually seen as instructor–classroom based, when in fact this kind of training is neither the only option nor the most effective one. On-the-job training is work-related training that occurs at the actual work site while one is working. It is an organized type of training designed to enhance the skills of the trainees or teach them new skills that will most benefit their task or discipline. Edward Deming (1984) preferred on-the-job training as one of the most efficient training methods.

Organizational leaders recognized the importance of becoming learning organizations (Blank and Werner, 1995). This implies identifying improvement opportunities through process and outcome measurement, as well as through customer feedback. Being a learning organization also implies staff training and development, concentrating on skills needed for each task.

Advantages of the on-the-job training

To be effective, on-the-job training must include the same ingredients as other forms of training—realistic practice, adequate guidance and helpful feedback.

Training offers a just-in-time and on-the-job learning experience that can be practised immediately and transformed into skills. Georgensan (1982) claimed that only 10% of what was taught in the classroom would result in changes in the work place.

On-the-job training has many advantages:

- it helps direct new employees on how to do their jobs properly
- it helps employees to discover whether they are doing their jobs correctly or not
- it allows early diagnosis and interruption of inefficient practices
- it allows behavioural learning
- it provides peer mentoring, coaching and mutual support
- all employees are involved

- it allows on-the-job skill experimentation
- it gives employees the chance to grow and take on new responsibilities
- it allows a learner to develop new skills while remaining available for urgent work assignments
- practice occurs under the same, site-specific circumstances where the tasks will be performed
- the mentor can adapt the training to fit the particular needs and strength of each learner
- the training can usually be provided much less expensively than when classes are assembled.

In spite of the importance of on-the-job training, some educational leaders do not see such training as the most efficient way to train. Some of the reasons for this view are the following:

- on-the-job training disrupt the trainee from job productivity
- the trainee does not necessarily learn the best techniques
- some crucial steps may be overlooked, because they were not needed during the training
- intensive training is difficult.

Design of the training activities: structure, process and outcome of the training system[1]

The purpose of any training programme is to teach trainees to do a job. In order to design training programme activities effectively, it is essential to consider a number of points regarding the structure, process and outcome of the training system.

Planners should design training activities using situation analysis and task analysis. In order to guarantee the success of a training programme, the following basic principles should be considered: the training activity should be designed for trainees to do a specific job; and the job description should determine what trainees will learn.

Only essential facts, skills and attitudes should be taught.

[1] Also see the example of a training workshop in Annex 3.

Structure

- List of participants
- trainers
- teaching aids
- venue
- cost
- time frame
- job description (list of job tasks).

Process

- Define learning objectives
- analyse participants' training needs
- prioritize needs
- analyse trainers, skills and experience
- curriculum design
- set timetable
- identify possible constraints and recognize solutions
- prepare training manuals and materials.

Outcome

- List of actual needs arranged according to priority
- appropriate training methods
- job directed training
- acquisition of needed skills, knowledge and attitudes.

Continuing medical and staff education

Continuing medical and staff education is education beyond initial professional preparation that is relevant to the type of care delivered by the organization. It may be provided via formal course work, medical journals and texts, teaching programmes and self-study courses.

World Health Assembly resolution WHA 30.43 in May 1977 stated that:

> the main social target of governments and WHO in the coming decades should be the attainment by all the citizens of the world by

> the year 2000 of a level of health that will permit them to lead a socially and economically productive life.

This objective continues in the 21st century.

In order to achieve this goal, health personnel must be trained to meet the community's health needs and become competent in their jobs. Systems of continuing education that allow practising health professionals to improve their knowledge, skills and attitudes are crucial for achieving this target. Continuing education of health workers also includes the experiences after initial training that help health care personnel to learn abilities relevant to their health work. Appropriate continuing education should reflect community needs in health and lead to planned improvements in the health of the community.

Continuing education is not just the presentation of information, but an active process that ensures the employees' understanding of their tasks and their full participation. Continuing education requires a comprehensive training policy for the entire organization. This policy should include definition of employees' needs, basic training, career development and working methods. Continuing education is concerned with the provision of relevant on-job training, support and supervision. It seeks to narrow the gap between managing and training, and to develop procedures, methodologies and materials that fit with the requirements of the organization. Continuing education promotes collaboration and teamwork in primary health care, improve management of resources, improve quality of services and reduce costs.

Why do health workers need continuing education?

- To update knowledge.
- To improve skills.
- To fill gaps in initial training.
- To preserve knowledge and skills.
- To find solutions to new problems.
- To meet changing community needs and demands.
- To meet changes in the health care system.
- To meet the changing role of health worker.
- To promote communication and teamwork among health workers.

- To increase job satisfaction.
- To gain confidence of the community.
- To assist in generating new ideas.
- To develop career.
- To permit evaluation (of the health worker).

Positive factors motivating health workers taking continuing education

- Sense of duty and vocation.
- Professional satisfaction.
- Promotion or better posting.
- Financial incentives.
- Pressure from the needs of the health team.
- Pressure from the community.
- Competition.
- Recognition of own limitations.
- Prestige.
- Encouragement and example by superiors.
- Opportunity for applying new knowledge.
- Easy availability.
- Condition of service.
- Condition of re-licensing.
- Self-learning in basic training.

Negative factors leading to health workers not taking continuing education

- Unawareness of need.
- Unawareness of own deficiencies.
- Reluctance to admit own limitations.
- Domestic and family responsibilities.
- Competition for time (such as private practice).
- Inconvenience.
- Financial constraint.
- Language problem.
- Bad system, unattractive programme.
- Defective basic training.

Some of the forms, methods and media available for continuing education

- Case studies.
- Audiovisual presentation.
- Role-play.
- Regular meetings.
- Workshops or group courses.
- Self-directed learning.
- Problem-based learning.
- Journals, textbooks and guidelines.
- On-the-job training.
- Supportive supervision.
- Consultations.
- Visits.
- Courses.
- Seminars.
- Symposiums.
- Congresses.
- Lectures.
- Journal clubs.
- Group discussions.
- Self-assessment.
- Distance learning and correspondence courses.
- Patient records.
- Computer programs.
- Mass media.
- Exhibitions.

Planning a programme of continuing education

- Assess situation.
- Define objectives.
- Develop strategy in detail:
  - what will be done?
  - how is it to be done?
  - with whom will it be done?
  - when will it be done?

- where will it be done?
- how much (resources)?

Types of trainer

There are five types of trainer as described below.

Amorphous

Confident but unprepared and vague; least likely to think out or write down their objectives; least likely to keep students informed of topics or objectives.

Eclectic

Use variety of techniques including humour, but lack confidence in their lecturing ability; they have difficulty selecting instructional materials. They write down headings, subheadings and brief notes rather than detailed notes—and are more likely to use a single text as their resource. Also, most likely to digress from notes.

Oral

Almost exclusively talk: no visual aids: They write down headings and brief notes as preparation.

Visual

Confident visual information providers: they use visual aids extensively with diagrams to show relationships and processes; write full notes in preparation.

Extemporaneous

Confident, well structured and able presenters, they use a wide range of oral and visual techniques; tell students the objectives of their lectures; inform students if a topic has not been covered; use overhead projector or other means to outline main points; and provide ample handouts.

Mobilization of resources

Use of available resources

Management of resources is a major part of planning and management in primary health care. The quality of services provided in primary health care depends largely on the available resources and the way they are used. The adequacy of the available resources depends on the quantity, quality and appropriateness of these resources to the needs of the community and their suitability to the socioeconomic situation.

In primary health care, resources can be classified into four major categories:

- human resources
- physical resources
  - materials (facilities)
  - buildings
  - equipment (commodities)
  - supplies
  - vehicles installations
- financial resources
- information and technological resources.

There is a general concern in most countries that the available resources are not used effectively or efficiently. The use of available resources in primary health care could be enhanced in a number of ways:

- the establishment of a good accounting system
- rational allocation of resources between different sites (centres) according to the scope of services and the estimated needs
- rational allocation of resources between different aspects of health care services (preventive and curative)
- training of health administrators, leaders and other primary health care personnel on resource management
- incorporating resource management into the curricula of basic training programmes
- continuing education programmes

- increasing the competence of the staff in the use of resources through specific training and development programmes
- the development of rules and procedures for the use of different resources
- instituting a maintenance and repair programme for equipment
- supervision
- improving communication and support for top management
- development of information systems on the use of resources, costs and quality of care
- use of appropriate technologies
- improving human resource management and their appropriate distribution
- recruiting and selecting
- motivation and support
- generation of resources
- intervention cooperation
- intersectoral collaboration
- community participation.

Resource generation through intersectoral collaboration and community involvement

Primary health care is defined as "essential health care made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford" (WHO, 1988).

As the definition implies, the existence of active community involvement and intersectoral collaboration is essential for the success of primary health care. Primary health care calls for a state of partnership with the community, as well as other related sectors, in order to continuously attain a state of effective coordination and support in the processes of planning and implementation, as well as evaluation.

With regard to resource generation, community involvement could be in the form of:

- contribution of human resources
- donated facilities

- funds to support specific activities
- planning the appropriate use of resources
- evaluation and reallocation of resources.

However, it is important to realize that the extent of community involvement depends on the efforts, attitudes and ability of the primary health care staff in achieving community interest and full participation. Another important factor for the degree of community involvement in resource generation depends on community resources and socioeconomic conditions. On the other hand, resource generation through intersectoral collaboration can be achieved through joint training programmes, coordination of activities and exchange of experience and expertise.

Training of trainers

Trainers are one of the most important elements of any training programme. Their ability to promote the process of training by provision of guidance and assistance to trainees, provision of the training subject and through the rational evaluation of the training programme is very important for the success of the system. The quality of the training system depends largely on the quality of trainers. The role of the trainers is to prepare the trainees for health systems that meet the needs of their communities. That is why the task of selection and training of trainers is basic to the design of any training activity. As promoters of learning, trainers need more than a sound grasp of their discipline: they need to posses the knowledge, skills and experience of teaching and learning methodology. They need to know about the mission, vision and the strategies of the organization. Due to their vital role in accomplishing the mission of the organization, trainers need to be selected and trained with great care.

The selection of trainers depends on the training goals, the subject and the training strategy. The nature, level and difficulty of the training subject determine the level of trainers needed, while the training strategy determines the level of teaching skills and experience needed. Qualified trainees are the key word under all circumstances. Qualified trainers should:

- be dynamic and interesting
- have experience in the content area

- have a good academic background
- be willing to work within the framework outlined in the workshop design.

In general, the ability of the trainers is reflected by their abilities regarding a number of factors.

Knowledge, experience and skills of the job (subject)

Trainers cannot teach what they do not know. They need to possess good job skills and they should be able to conduct the subject they are teaching with great efficiency.

Knowledge, experience and skills regarding an organization

Trainers need to know the mission, vision and strategies of an organization, as well as the available resources.

Teaching experience, knowledge and skills

Although trainers cannot teach what they do not know, job knowledge and experience cannot ensure the ability of the trainer. Trainers need to possess the skills and experience to transfer this knowledge to the trainees.

Communication skills

Most training activities require high levels of communication skills (e.g. lectures, conferences and demonstrations).

Personal characteristics

Good trainers are usually emotionally stable, clever, confident and interested.

Knowledge of the community

Good trainers should be familiar with the community from whom the trainees are drawn.

The number of persons to be included in the training team is decided by the overall workshop coordinator. Two general rules would be to:

- choose the minimum number of qualified persons to be able to cover the content areas and to be able to assist in the group discussion
- have a ratio of one resource person for each seven to ten participants.

Organizations need to build their own abilities and train some of their executive employees and supervisors to be good trainers and guarantee the effectiveness of the training activities and their suitability to organizational needs. For any training of trainers programme to be successful, there are a number of prerequisites:

- highly qualified trainers
- training manuals
- training space
- audiovisual aids
- appropriate training content
- appropriate training methods and techniques
- planning
- evaluation of training
- feedback to trainees.

Evaluation of training

Evaluation of the training activity should cover the following topics.

Training activity evaluation

Evaluation of individual sessions should be done on a daily basis in order to obtain participants' reaction as soon as possible after the presentations and discussions.

A final evaluation of the entire training activity should take place on the last day to see if the overall objectives of the training activity have been met or not, if there is a need to adjust content materials organization, etc.

Participants' evaluation

This is usually done through the use of testing conducted before the training course and after that. This will measure the amount of information gain, if any.

Follow-up evaluation of participants

Feedback information about participants' subsequent activities should be collected in the form of questionnaire or a report. Other forms may include:

- observations
- interviews
- surveys with questionnaires
- anthropological studies
- administrative record reviews
- literature reviews
- service statistics
- focus group discussions.

This type of evaluation can be done 6–12 months after the training session or on a regular basis through the routine health information system.

Programme evaluation

The programme could be evaluated as a whole in one of the following forms.

Process evaluation

Process evaluation is usually done any time in the first few years of programme implementation, preferably included in the plan during the second year of implementation. In this exercise focus is on the provider part (staff knowledge, attitude and practice, structure and equipment) and the adequacy of staff training.

Outcome evaluation

Outcome evaluation is usually carried out using selected health indicators that reflect the impact of the programme on health status. This could be done through comparative studies of these indicators before programme implementation and four or five years after implementation. This is usually supported by surveys and research studies that involve consumers of the care provided at the community level.

What evaluation is or should be

Evaluation is a valuable management tool. It should produce a sufficient amount of the most relevant and reliable information required for the purposes intended. Evaluation should involve project staff, the communities served, those responsible for implementing recommendations and supporting agencies. It should feed forward, as well as feed backward, and be simple, practical and feasible.

Phases of evaluation

Preparing

- Initiation.
- Formulation of objectives (why).
- Selection of main questions (what).
- Preliminary investigation.
- Selection of methods (how, when).
- Selection of team (who).
- Establishment of terms of reference.
- Preparation of detailed questions.

Evaluating

- Collection of data.
- Analysis and interpretation of data.
- Formulation of conclusions and recommendations.
- Report writing (to whom).

Using

- Use of evaluation results (what next).
- Sharing the lessons learned.

Evaluation report

The evaluation report considers the following questions. *Why* the evaluation was undertaken or, the purpose and rationale of the study. The rationale for the evaluation should be made as explicit as possible. *What* problem was addressed. *How* the problem was studied, i.e. the methodology

and procedure for the evaluation. It should also include the conclusions of the study and recommended actions required to improve the programme or project.

Use of evaluation results

A common problem with an evaluation is that it is put on a shelf and ignored. The plan of action should ensure the proper use of evaluation results. Finding/conclusions must be communicated with the policy-makers concerned through memoranda, meetings, etc. A staff member must be made responsible for follow-up in a systematic way on the implementation of the evaluation recommendation. There should be procedures for the systematic review of evaluation reports, especially by senior-level staff.

Terms of reference

The terms of reference set out the formal agreement on the evaluation. They sets out the requirements which the evaluators have to meet in order to fulfil their task. They should contain:

- a summary background and history of the programme
- programme/project objectives
- reasons for and purpose of the evaluation
- the scope of the evaluation to be carried out
- a short description of the evaluation design and methods
- the agencies/individuals participating in the evaluation
- the human resources support available and logistical arrangements
- a timetable
- the cost of evaluation
- a table of contents.

Building the quality improvement supportive structure

Quality improvement council/unit

In order to plan for quality improvement effectively, a long-term task force for the quality improvement effort should be implemented. Such a task force is often called a quality council, a cross-functional group, a steering committee or a quality improvement committee. The quality council is an

executive committee that is dedicated to maintaining an organization's quality improvement focus, as well as to launch, coordinate, provide accountability and institutionalize quality improvement efforts. Such a council is usually chosen by the head of the organization. While the head and other senior executives should be involved in the quality council, others from middle management and various hierarchical levels may also participate. Participants from all major departments in the organization should be involved. In general, the council should consist of members who can oversee the different cross-functional teams and help to keep the organization focused on the quality improvement effort. The council may consist of 10–15 members. The organization's leader or any other senior executive manager should chair the council. The council may also assign a facilitator to coordinate with the different quality teams. The facilitator should be a member of the quality committee who possesses quality improvement knowledge and skills, as well as good human relations and communication skills. Employee representation may help grass-roots employees to understand the role of the quality committee and communicate the change needed to their colleagues.

The role of the quality committee consist of the following activities and responsibilities:

- developing an overall quality improvement mission
- establishing quality direction, strategy and policy
- facilitating implementation
- providing resources, including training, time, support and coaches
- assigning quality improvement teams and empower others
- monitoring and evaluating the progress of the quality improvement teams and the quality process, as well as implementing solutions indicated
- participating in quality improvement teams
- providing guidance and direction to the quality improvement teams by demonstrating visible leadership
- participating in educating quality improvement teams and individuals
- demonstrating commitment to the quality improvement process
- recognizing and rewarding positive behaviour.

Quality improvement staff

Quality improvement advocates that all staff members in an organization develop their own ideas on improvement of their own jobs. However, quality improvement teams are the focal points in guiding the quality improvement process.

Quality improvement teams are groups of employees assigned by the quality council, often cross-departmental, who plan, direct, develop strategy, teach, train, asses and provide feedback and praise in order to improve a system or process in the organization.

There are four major types of quality improvement team.

Task teams

Task teams are temporary in nature and comprise members from the same department.

Project teams

Project teams comprise members from different departments. Each team has a well defined task but members are bound to their departments.

Functional teams

Functional teams comprise members from different departments. The team has assigned tasks that cut across functional lines. Members are not bound to their departments and do not require departmental approval. They are more permanent than task and project teams and are usually given higher level tasks.

Self-directed teams

Self-directed teams comprise members from the major departments. The team has broad ill-defined tasks. Members are not bound to their departments nor to higher administrative levels.

Another way of classifying teams is as follows.

Innovative teams

An innovative team's objective is exploring possibilities and alternatives. These teams need autonomy and an atmosphere in which new ideas are encouraged. They are usually formed to create something.

Work teams

A work team's objective is to execute a well defined plan. For a work team to be successful, the members must clearly know what needs to be done (clear set of performance standards) and who does what. Examples of work teams are a surgical team, a primary health care team and an emergency room team. The success of these teams depends upon each member being committed to the task, responsive to the need and clearly knowing what to do and when.

Problem resolution teams

A problem resolution team's objective is to solve a specific problem. The most important and necessary feature of these teams is trust. Each member of the team must expect and believe that all team members will be truthful and honest as they search for a solution. These teams must rely on trust in order to address issues effectively.

Why do we need teams?

- Complex and multifaceted problems.
- Divergent points of view.
- Collaboration.
- Knowledge of process.
- Greater number of ideas.
- Greater acceptance of solutions.
- Higher implementation rate.
- Able to tackle larger issues.
- Mutual support.
- Cooperation.

Characteristics of effective teams

- Shared purpose.

- Interested in processes.
- Conflict identification and resolution.
- Focus on problem-solving.
- Balanced roles.
- Risk-taking encouraged.
- Attractive to its members.

Factors influencing team effectiveness

- Clear role definition.
- Careful time control.
- Sensitivity to each other and expectations.
- Informal, relaxed atmosphere.
- Good preparation.
- A high level of interest and commitment exists.
- Interruptions and distractions are avoided or kept to a minimum.
- Good minutes or records are kept.
- Periodically, the team stops and assesses its own performance.
- Members feel their team efforts have been recognized and are appreciated.
- The work of the team is accepted and used.

Developing a climate of trust

The quality council appoints quality improvement teams, and all team members should receive adequate training in quality improvement concepts and processes, as well as in team dynamics, including communication skills such as mutual understanding, two-way communication, and acceptance of information, ideas and opinions from others.

Analysing constraints and opportunities

Baseline assessment

The ultimate purpose of baseline assessment of primary health care is to improve the programme outcome. Baseline assessment will show not only the constraints that might face the quality improvement effort, but may also suggest improvement opportunities. The assessment outcomes can be used

also to develop realistic and applicable standards. Internal or external consultants or a combination of both can make the assessment. However, it is advisable that the department or the owner of the process should participate in the assessment activity.

Advantages of internal and external consultants

Internal consultants

- know the organization and the processes
- know limitations
- have more commitment
- facilitate action.

External consultants

- are not biased (no emotional or other limiting factors)
- can take risky decisions
- often have international experience.

A range of tools and techniques can be used for the baseline assessment, including observation, surveys, clinical audit, check sheets, nominal group technique, force field analysis (+/–), trend charts, storytelling, critical incident analysis and group self-analysis. The scope of the baseline assessment should cover leadership commitment to quality and the structure, process and the outcome of the organization, department or process.

Assessing the quality of structure

Assessing the quality of structure is measuring the availability and quality of available resources, including human resources, physical resources and supplies, information and technology resources, and financial resources. The quality of services provided by the primary health care system in any country depends largely on the quality of resources available for the system. The quality of human resources is reflected through their numbers, qualifications, knowledge, skills, attitudes, training and distribution and the presence of continuing education programmes. The relevance of the training programmes to the personnel jobs is also important. The assessment of the

physical facilities equipment's and supplies may include the following issues:

- appropriate size and design of facilities
- accessibility of all the facilities
- cleanliness and safety of the facilities' environment
- continuity of supplies
- adequacy and sufficiency of supplies
- availability and condition of essential equipment
- presence of maintenance facilities
- use rate of different services.

Assessing the information and technological resources includes the assessment of the medical records system, their completeness and adequacy, availability of an appropriate information system, the presence of suitable library and the conduction of researches. Assessing the financial resources could be achieved by assessing the effectiveness of the accounting system, revision of the financial plans and their appropriateness, the rational of resources distribution, and the strategies to generate additional financial resources.

Assessing the quality of the process

Assessment of the quality the process in primary health care includes the assessment of resources management, organization of programmes and delivery of programmes. This type of assessment is usually more difficult than the assessment of structure. Some indicators that might be used to assess process quality are:

- adequacy of training programmes
- realistic job descriptions
- availability of rational procedures for distribution of resources
- adequacy of support, communication and supervision from top management
- adoption of motivation and reward system
- degree of community participation
- degree of intersectoral collaboration

- presence of programmes that serve and satisfy the primary health care approach
- degree of satisfaction of patients and of personnel.

Assessing the quality of the outcome

The outcome is the result of the performance of the process. For the assessment of the outcome, the leadership should develop standards of acceptable outcome in health care.

Strategic planning

Strategic planning is planning for the long run. Strategic planning in primary health care is the systematic analysis of primary health care situations, evaluating both internal and external environments, as they will affect the current and future development of the primary health care system. Strategic planning typically covers a three- to five-year period. Although strategic planning is primarily the responsibility of top management in primary health care and in the health care system in general, it is critical that key department heads and employee representatives be involved.

Since strategic planning sets out where an organization or system will be in the future, mistakes in strategic planning are usually fatal to the organization, especially if they are not discovered early and corrective action taken immediately. Effective strategic planning must start with the development of vision, mission statement, and goals and objectives. The process of strategic planning consist of the following steps:

- collect information
- assess capabilities
- strategic assessment
- prioritize goals and objectives
- evaluate available resources
- develop an action plan
- monitor and evaluate progress.

In general, any strategic planning process should answer the following four questions:

- Where is the organization going?

- How can we get there?
- What is our action plan?
- How do we know that we are going in the right direction?

Analysis of the internal and external environments

The internal and external environmental factors that may influence the strategy should be evaluated before, during and after the development of the strategic plan.

Internal factors

- *Structure* Can the current structure support the plan?
- *Available resources* Do we have the necessary resources?
- *Capabilities and limitations* Are we ready for change?
- *Organizational attitudes and perceptions* Do we have the necessary commitment?

External factors

- National and international trends—the difference between our service and others.
- Competition.
- Community attitudes.
- Political forces.
- Availability of information and technology.
- Socioeconomic conditions.

SWOT analysis

SWOT analysis is one of the techniques used to help managers develop a strategic plan. SWOT is an acronym for strengths, weaknesses, opportunities and threats in the organizational environment.

Strengths

Organizational strengths might be used in the strategic plan to lead to an outstanding organizational performance. Such strengths might include: availability of resources, distinctive competencies, community appreciation and support.

Weaknesses

Organizational weaknesses are conditions that might lead to poor performance. Such weaknesses might include lack of support, old equipment and shortage of resources.

Opportunities

Opportunities are current or future conditions in the environment that an organization can use to its advantage. Such opportunities in primary health care include increased awareness of the importance of primary health care, increase in the number of doctors specializing in primary health care and increased budget allocated to primary health care.

Threats

Threats are current or future conditions in the environment that may be harmful to the organization. Such threats include lack of resources and socioeconomic changes.

Identification of opportunities for improvement

The purpose of health care is to improve patients' health and to use resources efficiently and effectively. As health care organizations attempt to improve and better serve their patients and communities they should continuously look for new opportunities for improvement and initiate planned efforts to use these opportunities. Quality improvement projects employ different methods and techniques in order to identify possible places for improvement. These methods and techniques include:

- collecting suggestions from employees
- generating improvement ideas through techniques such as:
  - brainstorming
  - nominal group technique
  - cause and effect diagram
  - selection matrix
  - force field analysis
  - flow charts.

Obtaining feedback from customers

Customers are the final judge of how well the organization perform. Dissatisfied customers must be heeded closely, for they often deliver the most valuable information. An organization should find out what customers think, what they want and what they need.

Measurement and assessment of current processes

The goal of measurement is to collect important data that can be used to assess how well a process is working and where specific improvement is possible. In considering what processes or functions to measure, we should select high priority functions or care processes, since it is almost impossible to measure and follow all processes. Such processes are those that affect the greatest number of people, those that are prone to problems, or those that are important to top management. Measurement is an essential part of any improvement effort. Measurement is essential not only to determine the level of performance and whether there are any opportunities for improvement, but also to set priorities for improvement, suggest how improvement may take place and to test the impact of the improvement change. Data from measurement should be compared to reference points. These reference points may include the following.

Previous performance patterns in the organization

It is important in such comparison to discover any process variation over time and to determine the type and cause of any variation. Tools useful in comparing current performance with historical patterns of performance include such data analyses tools as run charts, control charts and histograms.

Performance of other similar organizations

In addition to the comparison of current performance with an organization’s own previous performance, it is important to compare performance with similar organizations. This is important and enables the organization to learn about different methods of designing and improving processes.

Established or desired standards or targets

Such targets could be derived from the revision of the available literature, from expert opinion or from customer requirements.

Established guidelines, protocols and policies

Practice guidelines and critical paths are very useful tools for comparing current performance with the desired one.

Analysis of available information systems

Further analysis and assessment is usually important to recognize and identify possible causes of such performance. Different tools are helpful in this regard. These tools include:

- brainstorming
- cause and effect diagram
- scatter diagram
- Pareto charts
- benchmarking.

In spite of the many tools and techniques described previously to identify improvement opportunities, it is documented that the identification and selection of appropriate opportunities for improvement are some of the most difficult tasks for quality improvement teams. Moreover the choice should be determined by the level of skills and the available resources that predict the success or failure of the improvement effort.

Development of strategies for improvement

Development of improvement strategies in the health organization is important to get a better sense of the existing problems and to identify possible opportunities for improvement. Health care organizations must have a core process for systematic and ongoing improvement. Such a process or strategy must incorporate different quality improvement tools to be put to effective continuous use. One example of such a process is shown in Figure 5.3.

The improvement cycle starts by identifying high priority processes. Measurement of these processes using different tools and techniques

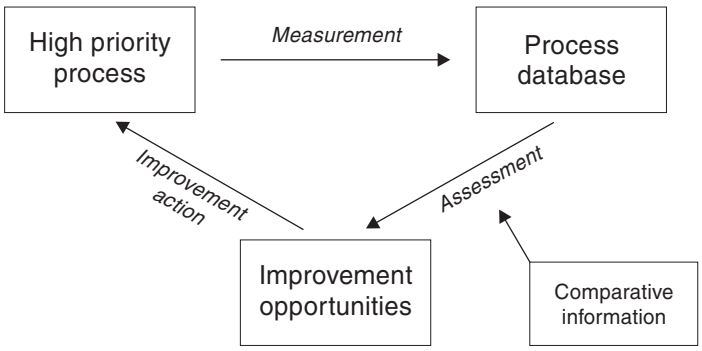


Fig *Figure 5.3. Quality improvement cycle*

appropriate for the process result in the development of an internal information database. Assessment of these information systems and comparison of these measurements with established standards or with performance levels in other organizations should result in the identification of improvement opportunities. It is important to mention here that this cycle should be continuous and even if the process is stable, opportunities for improvement should be looked for in the process design and outcomes. The process should be remeasured and reassessed in order to determine whether improvement has occurred or not. Reassessment using the new and ever growing information about the process may identify further opportunities for improvement.

Organization and empowerment of quality improvement teams

The quality improvement staff are the main players of the quality improvement process, and their roles include the following.

Quality officer

The quality officer is usually a senior staff member who plays the following roles:

- directs the quality improvement activities and provide guidance
- develops the quality training plans
- participates in training activities

- monitors the progress of quality improvement process
- presents reports and feedback to the quality council
- acts as a communication link between the team members and the quality committee.

Team leader

The team leader is a process expert who has leadership skill, communicates, is open, honest and fair, makes decisions with input from others, acts consistently, gives praise and recognition, has wide visibility and demonstrates assertiveness. The role of the team leader includes the following.

The team initial contact:

- prepares for meetings, including scheduling, site, location, etc.
- reports team concerns, progress and problems to the quality officer
- maintains team records
- leads problem-solving efforts
- coordinates team activities and oversees assignments
- participates in team activities
- is a source of knowledge and expertise in the task area
- is accountable for accomplishing the task
- has a full understanding of quality improvement tools and techniques
- assists other health care committees
- leads the team on preparing the problem statement
- keeps the team on track and manages team dynamics
- encourages and supports change
- demonstrates long-term commitment to improvement in the face of short-term pressure.

Key leadership actions for team leaders to promote a decentralized total quality process

- Establish a plan and structure to implement a total quality process in professional services.
- Create ownership for the process by developing an action plan.
- Create an administrative system with minimal bureaucracy.

- Develop a performance planning and reward system that recognizes teamwork, customer service and individual accountability.
- Create a quality culture that encourages leadership and employees to integrate the total quality process into daily work.
- Demonstrate that total quality process efforts are a priority.
- Develop a customer focus.
- Demonstrate that incremental and not just revolutionary change leads to continuous improvement.
- Demonstrate flexibility in the process.
- Move from a directive to an empowering style of leadership.
- Eliminate fear and create an environment that encourages risk-taking.
- Model appropriate behaviour.
- Use facilitators to help leaders improve and decentralize the process.
- Take the time to reach a consensus when appropriate.
- Allow divisional lead team members to lead discussions in meetings.

Team facilitator

The team facilitator is one of the most important members of the quality improvement team. The team facilitator has special experience in quality improvement He or she is the coach of the group, and the task includes the following responsibilities:

- keeping the team focused on the process
- teaching and instructing other team members
- counselling the team leader.

Team recorder

The team recorder's role is to take notes and document activities, record meeting minutes and assist the team leader in preparing meeting agendas.

Team members

The role of each team member includes the following:

- leadership role
- facilitation and involvement in teamwork
- attendance

- participation
- agenda-building
- listening to others
- sharing ideas
- complementing the team leaders on team efforts
- helping define the team's mission statement
- understanding the team's mission
- analysing problems in search of root causes
- sharing experience and knowledge
- generating possible solutions
- helping in selecting the best possible solution
- assisting in developing an action plan
- participating in implementing the solution
- helping to monitor and evaluate progress
- encouraging other team members
- assuming responsibility and completing assignments on time
- collecting data and providing open, honest and accurate information
- applying the steps of the quality improvement process.

Quality consultant

The quality consultant is a quality improvement expert, an internal or external consultant. The quality consultant's responsibilities include:

- providing professional advice
- providing training and support to other team members
- preparing consultation feedback reports to the quality council.

Integration of supervision into quality improvement

Rationale

Supervision is a special challenge that can help organizations achieve planned goals. Supervisors are essential for the success of any organization. Supervisors reflect an organization's interests in getting the work done. They represent the link between the top management and the grass-roots employees in carrying out policies, plans and procedures. Supervisors work as a buffer between top management and grass-roots employees. This means

that supervisors are responsible for maintaining a productive, efficient and disciplined environment inside the organization. Supervision is the only effective tool that helps workers in the organization adapt to the continuously changing work environment and maintain productivity.

Mechanism of supervision

The supervisor is a member of the management team in the organization. He or she represents the first line of tactical management that is in charge of employees executing the work. He or she forms the link between the workers and the top management. The mechanism of supervision is marked by three main characteristics:

- the position itself as it fits in the hierarchy of management
- the types of employee who are supervised
- the amount of authority given.

Job description of a supervisor

The nine major duties of the supervisor in the primary health care system are listed below.

Selection of workers

Since they will be responsible for getting the work done, supervisors should be given the authority to select their team workers.

Assign and distribute work

Supervisors should make the best of the special talents and skills of each worker. They should distribute the work so that no one will be overloaded and the work will be done appropriately. They should organize workers so that they work as an effective team.

Monitor and control performance

Supervisors should be continuously observing workers and the work environment to discover weaknesses and hazardous practices. They enforce safety rules at all times and inspect tools and equipment.

Evaluate individual employee's performance

The supervisor should be able to decide or at least recommend who will be promoted or rewarded and who will be fired or punished based on their performance. The supervisor should give feedback to workers on how they are doing.

Ask for necessary resources

Supervisor should ask top management to supply them with the necessary resources for the job to be done on time. They should distribute resources among workers according to their duties and skills.

Train and develop employees' skills

Supervisors, as experienced people, should be able to transfer their abilities and skills to other workers and use problems and unusual situations as training and development opportunities.

Lead the work team

Supervisors should act as a role model for the workers. They should be able to coach the work team, resolve conflicts among team members and facilitate teamwork.

Communicate well

Supervisors must have good communication skills to be able to describe to workers what is to be done and inform top management about work progress and requirements. They should also be able to communicate well with other departments and organizations.

Handle administrative duties

Supervisors should keep records neat and make reports up-to-date.

Supervision and quality improvement

Supervisors are responsible for improving results and getting the work done at time. The job description set out above shows clearly that supervisors should be able to use the different quality improvement tools and techniques in order to be able to fulfil their responsibilities. Supervisors

should possess and effectively control most of the quality improvement, tolls and techniques including:

- leadership skills
- communication skills
- problem-solving techniques
- team-building
- decision-making
- agents for change
- planning work
- time management
- training and coaching
- motivating employees.

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Chapter 6

Monitoring and assessment

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Monitoring is the periodic collection and analysis of data for selected indicators. This enables managers to determine whether key activities are being carried out as planned and are having the expected effects on the target population. Monitoring is performed in order to meet established quality goals, to identify problems (opportunities for improvement) and to ensure that improvements are initiated and maintained. Monitoring is a an important and critical process for an organization and just having a monitoring process is not adequate. Monitoring must be effective to meet its objectives. Thus an effective monitoring system will have a number of characteristics, such as being based on monitoring only key indicators, collecting only relevant data, gathering data that are easy to interpret and providing timely feedback to the information users (administrators and providers).

An organization may claim to have an effective monitoring process based on the above characteristics but that process may run into problems unless recognized and corrected. Examples of such problems include problems with data (too much, incomplete or inaccurate data), misinterpretation of information and inappropriate use of information in decision-making processes. Therefore, monitoring as a process should be well organized and well planned and should have as a minimum the following components.

- Delineation of responsibility and resources available: who will be responsible for managing the process; what kind of resources are available for the process (human and physical resources necessary); and has authority been assigned to the responsible personnel.
- Identification of sources of data; also assessing the completeness, accuracy and timeliness of data; whether an existing source of data need to be modified or whether an improvement is necessary on the existing data source(s).
- Determination of the data collection method(s); reviewing existing data, or through observation, surveying, or direct measurements.
- Development of data collection instruments. This is especially applicable if surveying is the method selected to collect data. Issues such as sample significance and representation, pre-testing, validation and bias limitation should be considered in developing data collection tools.
- Determining the frequency of data collection, analysis and reporting; considering whether it should be continuous and/or periodic.
- Determining the types of data analysis. This may include descriptive statistics, distribution, correlation, trends or statistical significance based on the type of data collected and the information desired on a specific service or activity. It is also recommended that data analysis should be accompanied by effective tools for proper and effective data display. Graphs and charts are easy to read and are more effective in attracting attention and comprehension, especially from a busy administrator or provider.

The following is a detailed description of the components of a quality monitoring system for health care organizations.

Monitoring and quality control

Description of quality control and the rationale for monitoring

Although quality can simply be described as the ability to meet the expectations of the customer, its application to the health industry has always been a problem. The initial definitions stressed the technical excellence with

which care was provided and on the characteristics of interactions between the provider and the patient (Palmer, 1991; Donabedian, 1988). It was widely believed that the perspective of the patient was not important because of the limited knowledge that patients had of what constitutes quality care and the difficulty in measuring patient views accurately and reliably. In recent years this concept has changed radically, as patients' employers and managed care organizations have begun to play a critical role in provision of quality of care (Blumenthal, 1996). Quality is now multidimensional and mandates meeting the expectations of the patient, employer, provider and the managed care organization. Quality is after all a dynamic process of incremental improvement, which requires management.

Management of quality includes coordination and facilitation of all activities related to quality assurance, quality control and quality improvement (Nicholas, 1991). Quality assurance includes the process of planning for quality, and setting and communicating of standards. Quality control involves monitoring these standards, using appropriate indicators, and determining whether there is variation from the expected outcome and whether there is a need for improvement. Quality improvement identifies opportunities for improvement and prioritizes them. Following analysis and the design of an intervention, a solution is implemented to improve quality. The solution may or may not meet the set standards. This can be determined only by monitoring the quality process continuously. Monitoring therefore plays a critical role in delivery of quality care. Without quality control it is impossible to determine whether the standards are met and whether there is an opportunity to improve or not.

Monitoring: advantages and difficulties

Quality control monitoring has several advantages. Monitoring is the only way that an organization can determine whether the standards set forth in the quality assurance statement are being met. It can therefore provide valuable information about changes in care that result from quality improvement efforts. Standardized performance indicators allow valid comparisons between various clinicians and managed care organizations, simplifying the task of employers and patients (employees) in choosing the right organization or primary care physician. If these performance monitors

are incorporated into the daily tasks of the primary care physician, clinic facility or managed care organization, and the information is monitored in real time, it allows the organization to detect errors in management and prevent them in future. This is the final goal of quality control—to detect and prevent deviation from set standards. This leads to consistency of care provided, which results in improvement in quality.

Although there is no disagreement as to whether quality should be monitored, there is a significant disagreement in the way it should be monitored. Performance measures need to fulfil criteria set by clinicians, patients, managed care organizations and employers seeking care for their employees. Criteria set by clinicians may not necessarily be the same as those of the patients. Clinicians tend to seek performance monitors that tend to reflect the technical skill with which care is delivered and the success at treating a disease process effectively. On the other hand patients and their employers tend to use monitors which reveal information about their freedom to choose their doctor and the ease of access. Managed care organizations tend to seek indicators that reveal information about the delay in seeing a specialist or the number of days a patient spends in a hospital following a specific surgical intervention. This has led to widespread confusion and lack of standardization of the indicators. HEDIS[1] 2.5 attempted to resolve this by selecting set standard indicators. When it was realized that the indicators overemphasized preventative care, they were modified, and this later resulted in HEDIS 3.0.

Uses of monitoring

Monitoring is an integral part of any quality management plan, and its use is beneficial to the purchaser, employees (enrollees), health care provider (primary care provider) and the managed care organization (Table 6.1)

Purchaser and enrollee

In the US, purchasers and the enrollees have to make an informed decision about choosing the right plan for themselves. Cost is no longer a critical factor in the choice as it used to be. With time most purchasers and

[1] The US National Committee for Quality Assurance's Health Plan Employer Data and Information Set; http://www.ncqa.org/pages/policy/hedis/index.htm

Table 6.1. Uses of monitoring

Health care provider (primary care physician)	
Monitor use	Cost containment strategies
Monitor health of a population	Negotiate and set capitation fees
Establish clinical practice guidelines	Effective disease management
Effective disease prevention	
Managed care organization	
Monitor enrollee satisfaction	Maintain provider profile
Manage utilization review	Monitor population demographics
Setting premium rates	Negotiate capitation with primary care provider
Enrollee	
Comparison of various health plans by using consumer reports	
Choice of health plan	

enrollees are becoming sensitive about the quality of care offered. HEDIS and CAHPS[1] questionnaires are both designed to collect information about specific indicators used to monitor quality of care rendered. The consumer report generated from monitoring these data sets serves as a platform on which various health care plans can be compared. This makes it possible for the enrollee and the purchaser to make an informed decision about choosing an appropriate plan. This concept could be applied in other countries, where a modified HEDIS and/or CAHPS could be used to measure the quality of services at the primary health care level.

Health care provider

Both the primary care facility and the primary care physician can benefit immensely from monitoring quality. Numerous studies have been published demonstrating how quality can be monitored (Hammond,1992).

[1]The US Agency for Healthcare Research and Quality's Consumer Assessment of Health Plan Survey; http://www.ahcpr.gov qual/cahpsix.htm.

Whether a clinical practice guideline with set standards established in a primary care facility results in a better outcome is dependant upon monitoring this guideline (Stool, 1994). Primary care physicians are commonly involved in risk sharing with the managed care organization. This is often done through capitation where the managed care organization provides a set prepaid amount to the primary care physician for providing pre-determined benefits to a population. The primary care physician should use various aids to monitor the use of services for this population. Over-use of services can increase cost, and under-use can result in poorer quality of care. A well monitored use process is an excellent way to contain costs. Monitoring the health of a population covered by a plan reveals important statistical data, which makes it easier for the primary care physician to negotiate capitation with the managed care organization. Within a clinical setting, monitoring has been effectively used to treat various diseases (Gibson, 1995) and prevent many others through screening. Monitoring helps to reduce the complications of the disease (Hannan, 1990) and early detection during preventative screening can result in a better outcome and survival.

Managed care organization

Only those managed care organizations which monitor their enrollees know whether they meet their customers' expectations or not. Having this knowledge allows them to increase their market share in the competitive health care industry. A provider profile created by the monitoring physician and hospital services allows them to choose those providers or hospitals, which provide care in a cost–effective environment. Use review is an extremely effective strategy used by the managed care organizations to contain cost. Effective use reviews require close monitoring of specific indicators to detect under-use or over-use. Data collected from use reviews can be used to monitor the health of a population. This information is of critical value when premiums are set or capitation fees are negotiated.

Quality scorecard for improving medical group performance[1]

The Blue Cross California health maintenance organization, which was established in 1986, has over 1.2 million members. Blue Cross California introduced an annual quality scorecard in 1994 in order to measure and monitor the quality of care provided by its contracted medical groups. The scorecard informed the participating medical groups how they ranked against their peers. The results were disseminated in 1995, and Blue Cross California introduced quality financial bonus as an added incentive to promote improved performance. In early 1997, in an effort to improve performance of low-performing medical groups, Blue Cross California initiated an intervention aimed at these medical groups that scored below the 1996 scorecard average.

Blue Cross California included those participating medical groups which had over 1000 members and were amenable to improvement. The participating medical groups were monitored for grievances, satisfaction survey, preventive health audit and audit of quality, which included site visits, use management, provider credentialing, medical records and existing quality improvement plans in place. Each of these criteria was then weighted depending on importance and then totalled to calculate a score. The scores of the various participating medical groups were then compared, and a normal distribution curve was obtained. The study included 124 participating medical groups, which were ranked based on standard deviations. Those participating medical group which were more than 1 standard deviation above average received an incentive of $0.60 per member, those between the average and 1 standard deviation received $0.30 per member. The remaining 22 outliers were targeted for intervention, which included site visits, explanation of the scorecard method and specifics on how quality could be improved. Within a year the audit score improved from 38.3 to 44.8 points ($p < 0.05$). Of the 22 groups, 12 improved sufficiently to move out of the outlier group into the average range.

[1] This section is adapted from Belman, 1999.

Capacity-building for basic epidemiological analysis

There are several definitions of the term *epidemiology*, depending on which aspect of the field one is in. The meaning of epidemiology here is the study of the distribution and determinants of health-related states or events in specific populations, and the application of this study to the control and prevention of health problems. The term *determinants* is used to describe the relationship of age, sex, race, occupational and social characteristics, place of residence, susceptibility and exposure to causative or protective agents. Descriptive epidemiology is usually the first step in the process, describing the population at high risk for a disease and the determinants of the population. The analytical phase of the process uses the data of the descriptive phase in comparison with other groups to define more specific parameters of the population at risk. Prevention and health promotion efforts can then be developed, tested, modified and used to improve the health of the population.

Epidemiology and quality improvement

Epidemiological studies can be used for many aspects of quality control, especially quality improvement. The determinations of the common conditions in the population under study, with the identification of the processes that improve the outcome are the basis for quality improvement. Current efforts on common medical situations are working to improve the care of patients with diabetes mellitus, depression, and coronary artery disease. For example, CONQUEST, a computerized needs-oriented quality measurement evaluation system developed by the US Agency for Healthcare Research and Quality, is a source of information of clinical conditions and how they affect populations in terms of their prevalence, burden of illness, cost of care and other characteristics.

The literature is beginning to reflect the understanding of the linkage between epidemiology and quality improvement (Rohrer, 1997). The health of the population (Noren, 1997; Kindig, 1997), especially when the public health disciplines are incorporated (Lee, 1997), will shape efforts towards screening, prevention, diagnosis and treatment.

Use of health management information systems in quality improvement; data collection, analysis and reporting.

A health care system's ability to collect data is essential for the implementation of quality control and improvement. To be useful, the data must be accurate and timely, unbiased and relevant to the condition under evaluation.

Several organizations use the computerized patient record as the means to collect the pertinent data, create the information from the data for analysis of the care process, and report back to the clinician (Anderson, 1997). These efforts have been in both inpatient and outpatient settings. The clinician has current recommendations and guidelines online in order to enhance patient care. This eases the burden on the clinician, especially in light of the estimated 2000 guidelines currently available in the US.

Successful uses of information systems to improve the processes of care have been shown on a limited basis (Bodenheimer, 1999). Antibiotic prescribing in hospitals is one area successfully using the reporting of data to change practice, with a reduction in mortality. The use of computers has also been shown to reduce adverse drug events and remind clinicians of appropriate times for follow-up testing or influenza immunization for high risk patients (AHCPR, September 1998; January 1996). Physician's offices as the main site for outpatient care, are harder to redesign with computerized information and reminder systems.

Setting of standards and identifying key indicators

Developing standards and indicators for system components

Setting standards does not necessarily mean the development of standards from nothing, but it includes such activities as the search for and selection of the system to standardize and the selection of the right standards for adoption, modification or redevelopment. These newly set, developed or adopted standards should then be tested for applicability, reliability and validity. Standards should then be communicated (actively) to the intended audience and the appropriate users. Once standards are communicated to health professionals then a set of steps should be introduced in measuring compliance to these standards using an adequate number of key indicators

related to those standards. The measurement of the *variation* between current practices and the set standards is what monitoring all about.

There are a number of ways to set standards but in this chapter only one method of setting standards will be presented. Here, the scenario given assumes that an organization is actually developing its own standards (from nothing). Therefore a step-by-step approach of how to develop standards and indicators will be presented. Most organizations, however, rely on other specialized organizations such as the World Health Organization, the US National Committee on Quality Assurance or the Joint Commission on Accreditation of Healthcare Organizations and adopt these organizations' standards of expected quality. These same organizations may use the method described in this chapter to develop additional standards or to develop their policies and procedure, clinical practice guidelines or algorithms, which are all different forms of standard.

Steps for developing standards

There are several steps that should be followed for the proper development of standards.

- Select the system/function for which to develop standards, e.g. primary health care, immunization, maternal health or child health.
- Study the system and identify its components of structure, process and outcome with all its elements, e.g. physicians, nurses, medical records, patient admissions/discharge, patient satisfaction rates and infection rates.
- For the key elements of the system, assign a quality characteristic that will best describe the desired quality state of that element, e.g. timeliness, accuracy, completeness or training level.
- Decide on the format for the standard, e.g. quality statements, algorithms, clinical practice guidelines or policies and procedures.
- State the standard in the selected format.
- Attach a measurable criterion to the standard in order to convert it into an indicator, e.g. "the number of …" or "the percentage of …".
- Select the level of minimal acceptable level of the standard, e.g. 80%, 90% or 95%. This is the threshold for the standard.

- Assess the standard and the indicator for validity, reliability, accuracy (sensitivity, specificity and predictive value), realism, clarity and applicability.
- Pilot-test the standard and the indicator on a population similar to the target population and revise according to feedback.
- Communicate the standards and indicators to the target population.
- Put the standards and indicators into practice.
- Monitor compliance by measuring indicators periodically.

The above is a synopsis of the steps for developing and implementing standard in a health care organization. For more details, the reader is encouraged to seek further reading (Al-Assaf, 1998).

Development of an indicator for a standard

Once a standard is developed then an indicator can be drafted by using measurable terms to convert the standard into an indicator. Indicators in essence are standards that are stated in measurable terms. For example, if the standard is "Physicians associated with X hospital should be appropriately certified in their fields", then the indicator will be "the percentage (or the number) of those physicians associated with X hospital that are certified in their fields". Indicators are important for the monitoring of compliance to the standard and measuring variance from the desired level of achievement of that standard. Indicators however, need to be selected based on a priority system as only *key* indicators should be selected. Too many indicators and too many non-key indicators can overburden the system with excessive and probably ineffective data collection and analysis.

Developing thresholds

Thresholds are defined as the minimum acceptable levels of the standard to be based on measuring the indicator. For example, if our standard is "the health care organization should have minimal nosocomial infection", then the appropriate indicator for that standard is the rate of nosocomial infection in that hospital over a period of time or at a point of time. The

threshold on the other hand could be set for example at less than 1 case per 1000 patients.

The level for the threshold is usually selected based on certain principles. It could be selected based on past experience (using averages plus 1–3 standard deviations), or based on the industry norms (local, regional, national or international) or may even be arbitrary but only for a temporary period until a track record is achieved. Thresholds are of course revised regularly to reflect progress and changes in the standards.

Assessing suitability of standards and indicators

Standards should be assessed to ensure that they are appropriate for an organization. The organization should determine if the standards are valid, reliable, clear and applicable before they are disseminated. Indicators should have the same characteristics and be measurable. All too often, health organizations develop or adopt standards with little or no assessment. Consequently many standards are not appropriate or unrealistic and are simply not followed by intended users. In general, the assessment should be carried out on a small scale, using qualitative rather than quantitative data when necessary. The following procedure may be followed to assess standards.

- Determine all those in the organization who will use or be affected by the standards and select a representative group to review the standards. Since the number of users of standards in a given facility is small, statistical samples and rigorous qualitative analysis are not advised unless a national or system-wide effort is under way.
- Determine the method to use for obtaining information about the standards from the sample group. Possible methods are staff meetings, anonymous questionnaires and face-to-face interviews.
- Analyse the feedback and make any necessary changes before disseminating the new standards. Analysis should include a compilation of strengths, weaknesses and recommendations. The standards team should review and develop a plan to revise and implement the standard.
- Determine if the standards are valid, reliable, clear and practical, as described below (IOM, 1990). If they do not, then the organization

should revise the standards and reassess them to ensure that they meet these criteria.

Assess standards for validity

Assessment should determine if there is a strong demonstrated relationship between the standard and the desired result it represents. The organization should confirm that if the inputs are provided as they have defined them, and that if the processes are carried out as they have defined them, then the desired outcomes should occur. Expert advice may be required here to affirm validity of the standard. Certainly tests for validity could be applied on the developed standards to assess their status and affirm validity.

Assess standards for reliability

Assessment should determine if the same results occur each time the standards are used—the standard's measure reproducibility. A reliable standard will result in only a small amount of variation in the way the standard is applied every time it is applied.

Assess standards for clarity

Assessment should determine if the standards are written in clear, unambiguous terms so that the workers who use the standards do not misinterpret them. It is important that the sample of workers that test the standards represent those workers who will ultimately use the standards.

Assess for applicability and reality

Assessment should determine if the standards are realistic and applicable given the available resources and training of the health care workers responsible for complying with them.

A word of caution when assessing standards with a sample population. Make sure the sample is adequate and representative of the target population that will use and comply with the standard. Assessing sample size and representation of a target population is beyond the scope of this chapter, so refer to a statistical sampling text for further discussion (Al-Assaf and Schmele, 1993).

Challenges to setting standards and indicators

In spite of a large resource of existing standards and indicators to adapt to specific needs and the growing interest in establishing standards by various health care organizations, there still exist certain challenges to this process.

Reliance on explicit criteria

Physicians, nurses, and other health care professionals may resist using standards on the basis that standards/indicators impinge on the subjective judgement that they have developed through their practice. Some professionals contend that medicine is part art, part science, and that standards may require them to diagnose and treat without allowing them to use their professional judgement. Others may fear that standards/indicators will be used in a punitive manner, to identify and punish professionals who do not perform within strictly defined limits. Still others may feel that the presence of standards makes the practice of medicine like "cookbook medicine", and this may impede their creative ability in the diagnosis and treatment of patients. On the other hand, as one lawyer put it, "in a case of potential malpractice, if I know that the physician followed an acceptable standard of care, then I will not touch that case". Therefore standards may prove helpful to both the provider and the patient if followed appropriately. Of course one should also be aware of any other legal issue or impact such standards might have or are perceived to have on the practice of medicine. These are legitimate concerns and require an organization to address them in some constructive manner before developing or implementing standards.

Identifying appropriate resources, human, physical and financial

Developing or adapting standards takes time and personnel. Sometimes an organization must go outside its staff to use experts in the field. Throughout all of this effort the organization will incur certain costs that should be evaluated beforehand in order to determine if the effort is worth the costs.

The process of setting standards is an integral part of a cycle of quality improvement. This process is usually followed by communicating standards, then monitoring compliance via indicators. Through monitoring, gaps are

identified between what is expected to happen in health care, *vis-à-vis* standards, and what is currently happening. Teams are then assigned to analyse these problems, identify and implement solutions, and make recommendations to the organization for adopting the solutions on a wider basis.

This last part often entails modifying, enhancing or updating standards so that the organization's expectations for quality are met. Here again, standards should be periodically assessed for validity, reliability, clarity, and applicability. This can be viewed as a continuous cycle of quality improvement.

Setting standards is a necessary component of defining and improving quality of health care. Through standards, an organization defines what it expects for the inputs, processes, and outcomes of the services it provides. Through their indicators, standards are an instrumental part of monitoring the quality of care and identifying problems and measuring improvements in health care service delivery. Without indicators, organizations may not be able to measure their performance and compare themselves to other competitors. With periodic updating and modifications, they become a part of an organization's cycle of continuous quality improvement.

Other assessment and monitoring methods

Satisfaction survey

The health care industry has become extremely competitive in the recent past. Only those organizations that have information about their consumers have strategies to meet their expectations. There has therefore been an unprecedented demand for feedback from patients and their employers about their health care plan or their individual providers or health care organizations.

Advantages of a survey

A well conducted survey yields information that can be of immense help to consumers, health care providers and health plans. Consumer get an opportunity to compare the various health care plans allowing them to make a decision about choosing a health care plan or health care provider. The

health care plan gets an opportunity to evaluate the enrollees with respect to access and quality of care. Improving quality allows them to increase their market share and comply with standards put forth by schemes such as HEDIS and accreditation with organizations such as the US National Committee for Quality Assurance. The health care provider has an opportunity to assess the level of care provided and make efforts to alter its practices to meet the expectations of the consumer. Above all, a well organized survey will result in a consumer report which allows comparison of various health plans and providers against their peers. This is an important stimulant for improvement in quality, both for the provider and for the health care plan.

Rationale

Does a survey result in improvement of quality of care? Does it have a positive impact on outcome? These are critical questions that an organization needs to ask before it embarks upon the task of collecting data. All too often data are collected in a haphazard fashion, and no remedial steps are taken to improve quality. Numerous studies, however, have documented that patient satisfaction surveys do result in improvement in quality of care provided by a health plan or managed care organization. At the same time the publicity associated with a consumer report card puts psychological pressure on the health care organization to improve its services or provide services that are provided by competitors. A consumer report card collates data on performance of a health care provider or organization and compares them to its peers. The data for this report card are collected by monitoring the various indicators, such as access to care, delay in seeing a specialist and number of services offered to patients. Some states in the US mandate that the data within a report card be made public. This helps consumers in making informed choices about a health plan. A study conducted by the department of family and community medicine at the University of Missouri confirmed that public release of consumer reports is useful in assisting customers to make informed decisions and also in facilitating improvement in the quality and number of services offered by a hospital (Longo, 1997). Consumer reports also improve the quality of outcome, as demonstrated by a 52% reduction in mortality following cardiac surgery in New York (Hannan,

1994). This occurred within a year of report cards comparing various health care organizations and individual physicians were published.

Consumer reports in health care[1]

Do consumer reports make a difference in patient care?

Report cards created by regulatory bodies after monitoring a health care organization are a recent phenomenon. Monitoring and publication of report cards allows consumers to make informed health care choices but whether this leads to improvement in services or not is not well known. A study was carried out in order to study the behaviour of all Missouri hospitals providing obstetrical services. The Department of Health in Missouri monitored the obstetrical services provided by the hospitals and based upon this monitoring mechanism published consumer report cards. The Department of Health sought to see whether making the report cards public made them change their practices or include services which they had not provided before. Within a year of publication of the consumer reports approximately 50% of the hospitals that did not have car seat programmes, formal transfer agreements or nurse educators for breastfeeding prior to the report either instituted or planned to institute these services. The monitoring of performance indicators had instigated a change in health care organization practices once the report cards were published.

Need for standardization

Not too often surveys are designed to measure overall satisfaction. The questions may be institution specific or health plan specific. These surveys are not standardized and make it difficult for the consumers to make an informed decision. The US Agency for Healthcare Research and Quality attempted to correct this by introducing the Consumer Assessment of Health Plans (CAHPS).

CAHPS is a state-of-the-art survey and reporting kit, through which sponsors can provide consumers and purchasers detailed information that will help them compare health plans based on the experiences of plan enrollees. The CAHPS survey and reporting kit go beyond statements of

[1] Part of this section was adapted from Longo,1997.

overall satisfaction by measuring and reporting on consumer experience with specific aspects of their own health plans that are the basis of satisfaction.

Development of CAHPS

The CAHPS survey and reporting kit was developed by a consortium of the Harvard Medical School, RAND and the Research Triangle Institute and sponsored by the Agency for Healthcare Research and Quality. All of the products were tested in the field and evaluated for their validity and reliability. The questions and reporting formats were also tested to ensure that the answers could be compared across plans and demographic groups.

The CAHPS survey and reporting kit consists of a survey kit, a reporting kit and an implementation handbook. The survey kit consists of a core set of questions and a supplemental set to aid the survey of specific groups like Medicaid, Medicare and the paediatric population. The reporting kit included promotional and educational materials consisting of a brochure to advertise the availability of CAHPS print and guides to comparing health plans. The implementation handbook included step-by-step instructions for conducting the survey and producing the consumer reports.

Benefits of standardization by using CAHPS

- *Easy-to-use*. A handbook made it easy to implement the survey and report the results for comparing plans.
- *Accurate and clear.* Surveys and reports had been developed and tested to ensure that they would accurately and clearly report the experience of a wide range of respondents.
- *Useful for comparison.* The CAHPS kit yielded results that were applicable to all plan types, to a wide range of respondents and over time.
- *Universal.* The kit could be used to assess fee-for-service and managed care plans. The questionnaires for Medicaid recipients and Medicare beneficiaries and for consumers with children, chronic diseases, or disabilities were also included.
- *Flexible.* CAHPS users could engage a survey vendor or conduct the surveys themselves. Users could maintain ownership of their data.

Surveys were provided in formats for mail and telephone administration.

- *Free.* Developed with federal support, CAHPS materials were free to users.
- *Technical assistance.* Users had access to free technical assistance when questions arose in implementing the survey and reports.
- *Relevant.* The CAHPS surveys elicited information that was important to consumers choosing a health plan. The surveys included ratings of interactions with health care providers and plan administrators that consumers said were important to them.
- *Decision-orientated.* The contents and the format of the CAHPS reports helped consumers and purchasers to assess and choose among health plans.
- *Understandable.* The results were presented in clear and easy-to-understand formats.

Did the CAHPS make it easier to compare and choose between various health care plans? Did the enrollees become more knowledgeable by reading the consumer guide? The outcome is yet to be seen. It will be years before this information will be known. However more and more health plans are using CAHPS questionnaires to collect data.

An overview of the process of the CAHPS is available at the Agency for Healthcare Research and Quality web site (www.ahcpr.gov) and by Crofton et al. (1999).

Appraisal and evaluation tools

Weiner et al. (1995) reported on the variation in care of patients with diabetes using paid claims. They used explicit process criteria to judge the quality of care. This is one of five methods of quality assessment based on process data, outcome data or both (Brook, 1996). The other method to use an explicit criterion establishes *a priori* measures in order to determine the quality of care. This second method uses specific clinical characteristics in a population of patients, with a definition of the expected outcomes based on excellent, average or poor care. The explicit criteria are more strict than the implicit criteria. The three types of implicit criteria answer similar questions.

Could better care have improved the outcome? Was the process of care adequate? Considering the process and outcome of care together, was the overall quality of care acceptable?

Quality of life assessment tools

Although WHO defined health as absence of disease and infirmity and presence of physical, mental and social well-being in 1948, it is only in recent years that both clinicians and managed care organizations have started emphasizing the outcome of a therapeutic intervention based on the quality of life outcome.

The choice of therapeutic interventions for the clinicians has increased tremendously over the past few years, making the choice of a specific intervention very difficult. In a primary care setting, if both drug A and drug B are equally effective in treating hypertension but the side effects of drug A far surpass those of drug B, patients on drug B will have a far superior quality of life than those on drug A (Testa, 1993). This information is critically important and needs to be monitored. Therapeutic interventions for recurrence of cancer and AIDS (Kaplan, 1989) may prolong life by administration of expensive drugs but this may be associated with a deterioration of quality of life without any gain in survival.

If a therapeutic intervention improves quality of life outcome and allows patients to return to work earlier, this intervention could save millions of dollars for employers. A managed care organization monitoring this information could share it with the employers, helping them in their choice of managed care organization. On the other hand cost-containment strategies by a managed care organization could lead to deterioration of the quality of life, delaying the return of the employees to work, thereby offsetting the reductions in cost.

Measuring quality of life[1]

Measuring quality of life requires translation of various domains and components of health into a measurable quantity so that valid comparisons can be made and statistical tests can be applied. This is a complex task. A simple scaling technique from 1 to 10 may not encompass all the parameters

[1] This section was adapted from Testa, 1996.

of quality of life. A detailed questionnaire collecting all the information on quality of life may be too cumbersome for the patient. Questions related to the quality of life need to be customized to the parameter most affected by the therapeutic intervention. They need to be correlated to the objective data of clinical findings.

Criteria for selection of indicators for quality of life

The indicator should encompass the parameters that are under review. The parameters should include both objective and subjective findings. The parameters should be specific to the disease process under review. The indicators for quality of life measurement should be reliable and should yield consistent values. The validity of the indicators should be tested to confirm that it measures outcomes, which are under review. The indicator should be sensitive enough to document the minor alteration in quality of life parameter under consideration. A classic example would be measurement of quality of life in patients with AIDS. Patients with AIDS develop a wasting syndrome where they lose 10% of their body weight. Wasting and eventual loss of lean body mass lead to weakness, organ failure, secondary immune dysfunction, exhaustion and ultimately death. It has a profound negative effect on their quality of life. Patients lack the energy to work and perform daily household tasks, even dressing and bathing themselves, all of which lead to diminished self-esteem. Wasting also leads patients to believe that death is approaching. Thus a simple task like measurement of weight can be an important indicator in monitoring quality of life (Testa, 1999).

Study design

A cross-sectional study to test the quality of life requires a large cohort of patients and may not conclusively demonstrate whether therapy A is more effective in improving the quality of life than therapy B. Randomized studies require a smaller cohort of patients and allow meaningful comparisons between the two therapies with respect to quality of life outcomes. These could be performed in a retrospective manner or ideally in a prospective fashion. The latter requires careful planning in order to include appropriate parameters for review.

Selection of method

The survey could be performed in numerous ways depending upon the available resources and the time period under consideration. The common methods include a clinic survey, mail-in survey, telephone query or interview.

The questionnaires may be disease-specific or could include standard formats like the MOS-20 and SF-36 (Ware, 1992). The MOS-20 scales were developed in response to a medical outcomes study performed by Ware. They were not very comprehensive and were later modified to include various other parameters. The SF-36 scales were designed for use in clinical practice and research, health policy evaluations and general population surveys. The SF-36 assesses eight health concepts, which include limitations in activities due to physical problems, social problems, limitations in role activities due to physical or emotional problems, bodily pain, general mental well-being and vitality. These quality of life questionnaires are designed for use only by patients aged 14 or over. No quality of life assessment tools exists for the paediatric population.

With increasing health care costs and decreasing benefits, health care plans are reluctant to authorize services which only improve quality of life outcomes. Undoubtedly consumers (enrollees) with a better quality of life are more productive for their employers, and with time more employers will seek information about quality of life outcomes in their choice of health plans. This will start a cascade where an organization such as the US Agency for Healthcare Quality and Research will research this topic, and this will lead to development of standardized questionnaires. This will lead to its inclusion in a scheme such as HEDIS and be linked to the accreditation by an organization such as the US National Committee on Quality Assurance.

Difficulties with quality of life outcomes

Quality of life has always been difficult to define. It has variously been defined as emotional response to circumstances, the impact of illness on social, emotional, occupational and family domains, personal domains, personal well-being, the match between expectations and reality, and the ability of a person to meet his or her needs. With quality of life so poorly defined, assumptions about outcomes cannot be measured reliably. Efforts

should be first made to research what really constitutes quality of life and whether it can be measured meaningfully and statistical tests can be applied to it or not. Secondly, it should focus on “best possible manner in which to elicit views, concerns and values of patients with respect to their medical treatment” (Hunt, 1997).

Measuring performance tools

Problems with the quality of health care in general can be classified as misuse, underuse and overuse (Bodenheimer, 1999). Brook (1996) succinctly provides two caveats in measurements of the quality of medical care. There will not be any error-free measure of the quality of care. Secondly, the care can be assessed at multiple levels, ranging from the community to the health plan to the individual provider.

According to Blumenthal (1996), health care plans and organizations place a greater emphasis on the attributes of care that reflect on the functioning of the organization and their system. This is in part due to the external agencies evaluating the care provided by these organizations. One such agency in the US is the National Committee for Quality Assurance with two main activities. The first of these voluntary activities is the accreditation of health care plans, and the other is the publication of the Health Plan Employer Data and Information Set (HEDIS). Several large corporations will not contract with non-accredited health plans. HEDIS 3.0/1998 contains over 50 measures of performance, including childhood immunization, percentage of enrollees of certain ages with screening for cervical or breast cancer, and percentage of diabetics undergoing retinal examination. Centers for Medicare and Medicaid Services, which serves US Medicare and Medicaid beneficiaries, has worked with the National Committee for Quality Assurance to incorporate Medicaid- and Medicare-specific measures into HEDIS.

Centers for Medicare and Medicaid Services, in collaboration with the states, the managed care industry, consumer advocates and others developed the Quality Assurance Reform Initiative (QARI) in 1993 to monitor and improve the quality of Medicaid-managed care services. QARI placed particular emphasis on organizations’ own internal quality improvement efforts. Initiatives to improve accountability by requiring uniform collection

and reporting of data were another aspect of QARI. In July 1993, *A health care quality improvement system for managed care* was issued by QARI. In 1995, *Health care quality improvement studies in managed care* was published by QARI. The results of these efforts led to an expansion into Medicare-managed care quality assurance efforts.

The Quality Improvement System for Managed Care (QISMC) began for Medicare-managed care organizations on 1 January 1999, and starts for the Medicaid-managed care organizations at the discretion of the individual states. QISMC is a Centers for Medicare and Medicaid Services initiative to strengthen managed care organizations' efforts to improve and protect the satisfaction and health of Medicaid and Medicare enrollees. The Balanced Budget Act of 1997 mandated quality assurance measures, and QISMC guidelines and standards are the key tools used to implement this mandate by Centers for Medicare and Medicaid Services and the states. The development of QISMC predates the Balanced Budget Act. Beginning in 1996, QISMC had several goals. One was to make the most effective use of the quality improvement and measurement tools, and allows adequate flexibility for incorporation of new developments in the field. Another was to develop a coordinated Medicaid and Medicare quality oversight programme that would minimize conflicting or duplicating efforts. This would send a uniform message to both the organizations and the consumers. The third goal is to clarify the responsibilities of the states and Centers for Medicare and Medicaid Services, as value-based purchasers of health care services for vulnerable populations, in the promotion of quality. The final goal is the promotion of partnership between the states and Centers for Medicare and Medicaid Services, as well as other public or private organizations, in quality improvement efforts.

The QISMC standards direct a managed care organization to:

- demonstrate compliance with basic requirements for administrative operations and structures that promote beneficiary protection and quality of care
- collect and report data reflecting the organization's performance on standardized measures of health care quality, and meet such performance levels on these measures as may be established under the contract with the state or Agency for Healthcare Quality and Research

- operate an internal programme of quality assessment and performance improvement to achieve measurable improvement in enrollee health, functional status and satisfaction across a broad spectrum of services and care.

The standards address those areas of organization performance and operation that Centers for Medicare and Medicaid Services has determined to be closely related to the delivery of health care and enrollee service or quality improvement. The standards are applicable to all services provided to Medicaid or Medicare enrollees by managed care organizations. This includes substance abuse services, mental health and medical care. The standards apply to any Medicaid-managed care organization or prepaid health plan, and any Medicare-coordinated care plan, including provider sponsored organizations, preferred provider organizations and health maintenance organizations.

Centers for Medicare and Medicaid Services has developed a comparison between QISMC and HEDIS. This crosswalk has found the two measures comparable, but with subtle and significant differences. This crosswalk lists five classifications for the two systems:

- highly consistent or identical
- consistent with variation
- addresses with substantially fewer requirements (HEDIS has fewer requirements than QISMC)
- addresses with substantially greater requirements (HEDIS has more requirements than QISMC)
- does not address.

The National Committee for Quality Assurance standards in 1999 had two-thirds of the standards in the first two categorie, and 26% in the last two categories. There are sections in HEDIS not addressed in QISMC.

The Agency for Healthcare Quality and Research has developed CONQUEST (COmputerized Needs-oriented QUality Evaluation SysTem) as a tool to collect and evaluate health care quality measures suited or adaptable to the users needs. The condition database has 57 clinical conditions, and the measure database has 1197 measures. CONQUEST contains treatment and prevention aspects in the condition database, such as

hypertension and prevention of influenza. The measures database contains sets including avoidable hospitalization and urinary incontinence in females. CONQUEST is designed for searches on specific conditions or age groups, primary or secondary prevention, process or outcome measures, proxy outcome measures, and patient survey or medical record data. Users can search for measures currently in use, or limit searches to measures with reliability and validity testing. CONQUEST is a public-use database provided free to users, and is expandable, allowing users to add conditions and measures.

Quality improvement studies in primary health care

Quality improvement studies have focused principally on inpatient care for acute events, such as acute myocardial infarction or pneumonia. Recent years have seen a change to the outpatient care arena, especially in those instances where outpatient care can reduce the likelihood of hospitalization. One of the three dimensions of the Healthcare Cost and Utilization Project developed by Centers for Medicare and Medicaid Services is potentially avoidable hospital admission. Six of the eight areas directly impact the primary health care provider, paediatric asthma, immunization-preventable pneumonia and influenza among the elderly, perforated appendix, diabetes short-term complications, diabetes long-term complications and cerebrovascular disease among non-elderly adults. The Agency for Health care Quality and Research has a programme for the expansion of quality of care measures (Q-SPAN). This programme develops and tests a series of quality of care measures, including the care of patients with asthma, hypertension and diabetes, plus appropriate screening efforts for colorectal cancer, anxiety and breast cancer. As a result of the usual time lag between the process of care and the outcome, the process of care is a primary focus (Brook, 1996). A common example is the process of care for diabetic patients and the annual retinal examination. The time between onset of the diabetes and the onset of retinopathy is usually extended, allowing time for early intervention with the annual monitoring. Additionally, a poor outcome does not always immediately follow an error in the provision of care, with the process measures therefore having more sensitivity.

The quality improvement organizations contract with Centers for Medicare and Medicaid Services to monitor the quality of care provided to Medicare beneficiaries. The 53 quality improvement organizations are working on six clinical areas during their sixth scope of work (sixth planning cycle of operation since their creation in 1984). The quality improvement organizations strive to improve care in the outpatient setting in increasing mammography rates, providing influenza and pneumococcal vaccinations, and several measures in the care of diabetes. The individual quality improvement organization works with the medical community in its' state or territory to accomplish the goals. As each quality improvement organization is independent of the other 52, this is a national experiment on the best practices for increasing the desired levels of target indicators. The inpatient portion of the work includes care for patients with an acute myocardial infarction, pneumonia, congestive heart failure, or cerebrovascular accidents. These measures involve both primary and specialty care, and again look for the best practice in changing physician behaviour. Each topic has a lead quality improvement organization coordinating the exchange of information, passing to the other organization successes and lessons learned from the experience of others.

Not all quality improvement efforts are successful. The lessons learned from attempts made and not successful are as valuable as the well known triumphs, as multiple sites will not need to repeat the same efforts (Zazove, 1998; O'Connor, 1999). Generalizations on the quality of care are problematic, with limited evidence of the ability to translate the quality of care for one disease or symptom to another. This is particularly true for differing medical processes and functions such as treatment, diagnosis, prevention and screening (Brook, 1996).

Other

Disease management is an area for the change in the process of care for patients. The concept of disease management is the coordinated, proactive care of a patient with a chronic disease, such as diabetes. The ideal result is the improvement in the health status of the individual, as well as the population, with the disease under management (Joshi, 1999). Areas of uncertainty (Hulscher, 1999) are noted and are grounds for further research.

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Chapter 7

Certification, licensure and accreditation

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In today's health care arena, a number of issues are being raised that have received more attention either from the health care consumers or the media. The 1990s can easily be dubbed the period of "performance measurement". Whether as a provider, a consumer or a purchaser, each was looking for ways to satisfy the other through measuring and reporting on care outcomes. Accountability was at stake in that period. Several third-party organizations attempted to produce certain measure to report on these care outcomes. In the United States, "indicators" were developed and measured and "report cards" were assembled on the health care organizations of the nation. All of these activities were done in an effort to measure performance. In the international arena, WHO organized and facilitated a number of activities related to quality assessment, performance improvement and outcome measurement. A large number of countries and institutions participated in these activities and initiatives. And at the end, all agreed that there had to be an organized mechanism to account for quality, continuous measurement and improved performance in health care organizations. In order to do this a mechanism for certification, licensure or accreditation should be put in place.

It is not the scope of this chapter however to discuss all of these three mechanisms (licensure, certification and accreditation) in detail. In this chapter only accreditation will be explored. A definition of certification and

licensure will be presented, and a modest comparison between the three mechanisms will be attempted. A detailed exploration of accreditation will take up the majority of discussion of this chapter. The process and the methodology of accreditation will be discussed and a system for its implementation is presented.

Certification and licensure

It is very easy for a lay person to get confused with the terms and mechanisms of certification, licensure and accreditation. In general, certification, licensure and accreditation are all methods of evaluation and are also methods of assessing and rewarding organizations (and individuals) for quality. Accreditation is the only method however that requires a health care organization to follow a rigorous set of performance standards and be subject to a comprehensive process of self-assessment in addition to external evaluation. Both licensure and certification follow the same principle of assessment whereby an organization must demonstrate to the granting agency its capability and proof that it has met the standards prescribed by that granting agency. The difference between the three is therefore based on the rigour of the assessment process and whether the evaluation is comprehensive to all aspects of the organization. It is believed that in the case of accreditation, the process and the standards are more rigorous and more comprehensive in nature.

Therefore, *certification* can be defined as a process of assessing the degree by which a facility, product, unit or professional attains minimum standards. It is specific to the nature of the assessment, and the entity is "certified" as a special agency for the purpose of providing a specific service or activity. For example, an organization may be certified as a provider of care to a special population or as a training facility. Similarly, an individual may be able to pass a certain examination and become certified. Certification for an individual could be certification to be an auditor or an accountant or a trainer. Therefore certification is established for a specific purpose and is organized in order for the certified entity to engage in that specific activity on a prospective basis. Certification is an "add on" to the roles and responsibilities of an entity. For example, an organization which is certified

as a sports medicine centre would still be able to provide services in other areas if it chose to do so and as long as the other services did not require additional certification or licensure. Also, certification may not give the entity the permission to practise a certain activity or provide a certain service, especially if that activity or service requires a licence. Therefore in most cases, certification is not governed by law and is usually voluntary. It is used primarily as an added credential to an entity's qualifications and portfolio. Of course, certification has a set of minimum guidelines that must be met by the entity to be certified. It is also governed by a granting agency similar to accreditation and lasts a set time before renewal is necessary. Renewal however is usually automatic as long as the organization is paying its dues and is in good standing. Certification would seldom be revoked or withdrawn, and an entity would in most instances have to provide documentation that it still met the standards of the certifying agency. Unlike accreditation, a recertification on-site survey may not be necessary.

Licensure is somewhat more like certification than accreditation. Again it is targeted at all entities: individuals, organizations or groups. Licensure can therefore be similarly defined as the process of assessing the extent that a facility, organization or professional has attained minimum requirements. Again, licensure is a prospective process. The licensed entity is given such a privilege in order to be able to engage in a certain activity. Unlike certification, however, without a licence, an entity is prohibited from practising the activity for which a licence is needed. Failure to license renders an entity in violation of the law. Therefore licensure is usually a government-sponsored activity that is put in place to control the practice of a profession or an act that has the potential of risk to the recipient or the beneficiary. For example, if an organization is licensed as a mental health centre then it may function only as a mental health centre unless it has another licence that specifies otherwise. Licensure is also limited by time and is usually renewable annually and may only require the payment of dues and maintenance of good standing in the community. Licensure, however, is closely monitored for potential violations. It can be revoked or suspended if a violation is committed by an entity and can only be reinstated by the same governing agency (which is usually composed of peers). Although licensure can be voluntary, without it an entity cannot perform the specific activity for

which licensure is mandatory. An obvious example would be a physician without a valid licence, who may not see patients. Therefore technically speaking, qualified physicians are not obliged to get a licence unless they intend to practise their profession.

What is accreditation?

Accreditation is applied primarily to organizations rather than individuals, departments or units. Accreditation is a rigorous and comprehensive evaluation process through which an external accrediting body assesses the quality of the key systems and processes that make up a health care organization. Accreditation also includes an assessment of the care and service health care organizations are delivering in important areas such as preventive services and client satisfaction. Accreditation was developed in response to the need for standardized, objective information about the quality of health care organizations. Almost all accreditation programs are voluntary. Organizations seek accreditation for different reasons but most do so in an effort to increase market share and to win customer satisfaction and professional reputation. In all cases accreditation is voluntary.

The International Society of Quality in Health Care (1998) defines accreditation as:

> … a self-assessment and external peer review process used by health care organizations to accurately assess their level of performance in relation to established standards and to implement ways to continuously improve the health care system. Quality standards and the external peer review process are directed by nationally recognized autonomous, independent accrediting agencies with a commitment to improve the quality of health care for the public.

The Canadian Council on Health Services Accreditation (CCHSA) describes accreditation as one of the few and most effective measures that health service organizations can use to accurately assess their level of performance. It is a peer review and a self-assessment process that focuses on ways to continuously improve the health care system.

Each health service organization's performance is assessed against a set of national standards set by the accrediting organization in collaboration with key players in the health care system and related stakeholders. The assessment is designed to address processes, outcomes and structures, with the focus on continuous improvement within the health service delivery system.

The value of accreditation is in the internal self-assessment that an organization undergoes in preparation for the survey visit and in the consultative peer review process which is part of the on-site survey visit. The principle of self-assessment is the fundamental basis of accreditation. It serves as the mechanism by which an organization can assess its own performance, on an ongoing basis, against a set of nationally developed standards.

The on-site survey represents an opportunity for the health service organization to receive advice and have its performance validated by external reviewers. The survey is planned in partnership with the health care organization and recognizes areas of excellence as well as areas for improvement. (CCHSA, 1998)

A number of accrediting organizations have been established on the international scene. Some of these organizations are sponsored by the government of a specific country whiles others are primarily private not-for-profit organizations that have the support of national governments and key health care players in that system. In the US, there are four major accrediting agencies. Each is independent and each has a specific emphasis. For example, hospitals in the US are accredited by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), while ambulatory care organizations are accredited by either the Accrediting Association for Ambulatory Health Care (AAAHC), or by Utilization Review Accrediting Commission (URAC) or yet by the JCAHO. Managed care organizations are accredited by such organizations as the National Committee on Quality Assurance (NCQA) or by any of the other three agencies, JCAHO, AAAHC or URAC.

On the international scene, accreditation is handled primarily by a government agency or a quasi-government agency such as the Canadian Council on Health Services Accreditation (CCHSA) or its Australian,

Japanese, Indonesian, Austrian or Argentine counterparts. In all cases however, these accrediting organizations are governed by a board of both experts and independent agencies that represent other sectors in the health care system such as the private sector and academia.

According to AAAHC (1999), the certificate of accreditation is the most visible result of the assessment process. The ultimate value of accreditation, however, lies in the ongoing self-analysis, peer review and consultation the health care organization gains as it continues its participation in the programme. Organizations that seek accreditation first perform an internal (self) evaluation of all of their services and activities. Standards obtained from the desired accrediting organization are used to perform this internal assessment. Depending on the results of this assessment the organization may feel ready to invite the accrediting organization for the on-site external evaluation. During the survey, a team of senior health care professionals experienced in both clinical and administrative aspects, representing the accrediting organization, evaluates each and every aspect of the health care organization's care and service activities and units. The team then scores each standard according to the result of its on-site evaluation. When they have completed their survey, the team of surveyors makes an accreditation recommendation which is then reviewed by the accrediting organization's board of directors, which makes the final decision. Accreditation may be awarded for six months, one year, two years or three years depending on the level of compliance with the standards.

As per URAC (1999), accredited organizations must continue to remain in compliance with the applicable standards throughout the accreditation cycle. Accreditation status may be rescinded if an accredited organization is unable to comply with the accrediting organization's standards. There are periodic and unannounced on-site visits scheduled by the accrediting organization throughout the accreditation cycle. The purpose of these visits is to make sure that the accredited organization is continuing its compliance with the accreditation standards.

Of course each accrediting organization has a different system for accreditation and a different set of accreditation decisions. JCAHO for example, has seven levels of accreditation, namely:

- accredited with commendation or with excellence

- accredited with recommendations for improvement
- accredited without recommendations for improvement (accredited)
- provisional accreditation
- conditional accreditation
- preliminary non-accreditation
- adverse decision in appeal.

NCQA (1999) on the other hand has the following five levels for accreditation of managed care organizations:

- excellent
- commendable
- accredited
- provisional
- denied.

Historical perspectives and trends on accreditation

Accreditation was originated in the US as a mechanism to insure compliance to a set of standards in order for professionals to expect a certain level of quality in a health care organization. During the early 1900s a new awareness of quality in medical education was brought to the US government's attention through a report published by a notable physician, Abraham Flexner. According to this report, US medical schools at that time were functioning without any real guidelines or any specific standards that they had to meet. Therefore, the standards of medical education were extremely variable from the very good to those that were barely considered adequate. It was at this same era that a group of US surgeons represented by the American College of Surgeons put together a list of minimum standards for hospital operating rooms. The purpose was to have these hospital operating rooms comply with these standards in order to be "certified" by this group as acceptable. This programme was known as the hospital standardization programme. The programme was established as a reactive measure against the wide variations that existed then between hospital operating rooms. Its purpose was, of course, to minimize this variation and to ensure a certain level of quality in order for these rooms to host surgical

operations. This programme is considered the precursor of the accreditation system that US hospitals currently have.

Following this initiative by the American College of Surgeons and still leading the efforts of standardization, the same organization got together with a group of other professional organizations to form the then called Joint Commission on Accreditation of Hospitals (JCAH) in 1951. JCAH published its first standards for hospital accreditation in 1952 and rapidly became the hallmark for quality in US (and Canadian) hospitals. This list of standards has grown considerably over the years, and now the accreditation manual for hospitals boasts hundreds of standards and over 300 pages.

Accreditation standards not only grew in quantity but also in focus, setting and quality. When first developed, these standards were primarily *structure* standards—standards related to either the physical structure of a hospital or to its human resources. More *process*-oriented standards were introduced to the manual, and later *outcome*-related standards were also added. The current list includes more process standards than structural standards and has over the years included such areas as patients' rights and responsibilities, leadership and ethics, therefore moving away from distinct "departments" to functions. The focus of accreditation has also changed over the years. Hospitals were the first to be accredited but now, ambulatory care facilities, nursing homes, rehabilitation facilities, mental health facilities and home health organizations as well as managed care organizations are also surveyed for accreditation. Another change in accreditation is that not only the Joint Commission is responsible for all accreditation activities but other agencies started forming for the same purpose and not only in the US but also in other countries.

In late 1987, the Joint Commission changed its name to the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). It explained that the change of name was a reflection of its current involvement since its services has expanded considerably to include other health care organizations. Also, and because of pressure indirectly exerted by the US government and consumer demands, accreditation criteria started to emphasize not only compliance with a certain set of standards but also mechanisms for continuous improvement of performance. So, a health care organization may have met the structure and process accreditation standards

but it must also demonstrate a proven path and experience in the continuous pursuit of improvement. Moreover, certain accrediting organizations, such as the National Committee on Quality Assurance (NCQA), the premier accrediting organization for managed care plans in the US and most probably the world, are pushing their constituents to "close the loop" on improvements. These organizations, in order to receive accreditation, must demonstrate their capabilities and experience in improving certain patient outcomes and show that they are able to maintain and continuously improve such outcomes through frequent monitoring and remeasurement. Therefore, accreditation as we see it now is not only a quality *assurance* activity but also a quality *improvement* effort.

More and more organizations and countries are becoming interested in accreditation. The International Society for Quality in Health Care has organized a group of international representatives, and this group has met at least annually since 1996 in order to design a system for international accreditation. This group has also received the attention of major health care organizations around the world including accrediting organizations from the US, Canada, UK and Australia. Similarly, WHO began its efforts to increase awareness of different countries in the six WHO regions on accreditation. In 1998 WHO's Regional Office for South-East Asia held an intercountry meeting on accreditation in Indonesia with representatives from the countries of that Region. The Regional Office for the Eastern Mediterranean organized a similar activity in 1999 in Limassol, Cyprus. Again, almost all of the countries of that region sent their representatives to that meeting. The outcome of the meeting included a number of recommendations for member countries to organize specific activities towards introducing accreditation in these countries. The WHO Regional Office for the Eastern Mediterranean is working with those countries that have shown interest in accreditation in order to design a system and a mechanism for implementing such a programme in their health care systems.

Why accreditation?

For more than four decades, accreditation has been the highest form of public recognition a health care organization could receive for the quality of

care it provides. Accreditation offers quantitative as well as intangible benefits to a health care organization besides public recognition. Accreditation can actually enhance the organization's strategic management decision-making process (AAAHC, 1999).

The purpose of accreditation can be summarized by the following categories:

- customer demand
- a forum for measuring performance
- standardization and variance control
- benchmarking
- report cards
- quality improvement
- positive competition
- reward and recognition
- efficiency.

Effectiveness

Let us discuss each of the above reasons for making accreditation an important process for countries to adopt and by organizations to seek.

Health care consumers are becoming increasingly aware of the different requirements a health care organization must meet in order to be considered a quality organization. They are also becoming interested in learning about the status of care provided by an organization judged by its peers or professional experts. Accreditation provides just the answers and the assurances that health consumers are asking for. Accreditation provides a mechanism for an objective unbiased peer review of a health organization. It provides the consumer a set of measures by which they can judge a health care organization in comparison with similar organizations. With the seal of approval, accreditation also provides the consumer a level of comfort ensuring that a health care organization has been checked and is considered a quality organization since it has passed a rigorous set of evaluation processes. In essence, accreditation could be defined as the process of assessing the quality of an organization for the purpose of providing comparative information to the customer.

Accreditation standards are developed to be as quantifiable as possible. These standards follow the various functions and units health care organizations perform and possess. Standards are developed and are updated annually by a group of experts that are related directly to the process of care and to the structure of services rendered by the health care organization. These standards are therefore developed to measure the performance of the health care organization in the aspects of care and services it claims to provide. Compliance with these standards is a proxy measure of the performance of such an organization. Of course compliance may have to be substantial for the health care organization to receive the seal of approval from the accrediting organization. In this way accreditation can work as a measure of the performance of the organization, especially in such areas as structure and process.

One of the main activities of accreditation is to set standards that a health care organization must meet. These standards are usually developed rigorously by experts. It is with these standards that the accreditation agency is able to measure the quality of the health care organization they want to evaluate for accreditation. Therefore, these standards soon become the yardsticks by which performance is measured and accreditation is achieved. Standardization is important in order that objectivity can be assured in the evaluation process. It is also a mechanism for controlling outcomes and comparing performances. Meeting certain standards will render the health care organization “accreditable” and will decrease variation between its current performance and the desired one. Standardization is also useful in controlling cost by controlling expectations, predicting outcomes and facilitating effective budgeting.

Benchmarking and report card capabilities are two of the reasons why health care organizations should seek accreditation. These are also reasons why accreditation should be developed in order for companies to be compared with one another based on the findings of accreditation. Benchmarking is a process of identifying the best process, activity or outcome and to find ways to study them and emulate them in one own setting. Through the process of accreditation, health care organizations are encouraged to look for the best processes of other organizations in order to study these processes and learn about performing them so that they can be

imported and implemented in that organization. Benchmarking is usually enhanced by the fact that most quality organizations are accredited. Similarly one of the reasons for accreditation is to list on the health care organization's report card (outcome measures) that they are accredited. A report card that does not have accreditation listed on it is not complete and certainly not credible. Therefore, organizations must seek and attain accreditation in order for them to list it on their report card.

According to the quality improvement cycle shown below, accreditation is involved in all of the steps of the cycle, including quality improvement. The process of accreditation emphasizes assessment but it also encourages improvement based on the outcome of such assessment. It also encourages organizations to initiate improvement projects. Most of the new accreditation standards call for health care organizations to demonstrate their capabilities of identifying improvement opportunities and initiating processes for improvement and development. Accreditation agencies respond positively to those organizations that demonstrate their experience in "closing the loop" from the identification and analyses of improvement opportunities to selection and implementation of actual improvements and then maintaining their sustainability. Therefore, accreditation will stimulate improvement efforts in health care organizations and will bring these organizations to a higher level of accountability.

Accreditation provides a mechanism for comparison between health care organizations. Those organizations that have achieved accreditation, especially "commendation" or "excellent" status, will have a positive image and will use that distinction to market their services accordingly. Accreditation can therefore be used as a tool for positive marketing and as a tool that enhances positive competition between health care organizations. Competition can be based on price or other factors. Competition based on quality as exemplified by the attainment of accreditation is a form of non-price competition and is a form of *positive* competition. This type of accreditation is in contrast with the type of competition exhibited by and between political candidates where they each try to find weaknesses in each others' performance or character to attack. Positive competition on the other hand encourages benchmarking and identifying the positive attributes of your competitor in order for you to achieve even a better level of these

attributes in your organization. It is a process of continuous search for excellence and a mechanism for emulating that excellence in ones own systems. Accreditation facilitates this process and encourages it.

As stated earlier, receiving accreditation is equivalent to receiving the seal of approval on the quality of one's own organization. This recognition certificate is usually worthy of announcement and heavy marketing to promote it. It is both rewarding and beneficial to an organization and its employees. Accreditation can also be used as the mechanism for rewarding individuals who have worked hard in order for the organization to achieve it. It is also a method of recognition among peer organizations and proof of quality.

Quality has many dimensions. Two of these dimensions are related to the ability of an organization to attain its objectives in a timely and cost–beneficial manner. Therefore the ability of an organization to use its resources in the optimum way is one of the important dimensions of quality. Similarly, an organization that can demonstrate its ability to achieve its goals and objectives in a timely manner is considered an effective organization and therefore has met anther dimension of quality. Accreditation is somewhat similar to what quality is all about. Accreditation requires an organization to be effective and to use its resources most efficiently. In order for the health care organization to achieve accreditation it has to demonstrate its effectiveness and its efficiency through completed projects related to their mission, their objectives and their goals. Efficiency and effectiveness must be practised and proof must be documented in order for an organization to receive accreditation.

The benefits

Here are some of the benefits of accreditation according to JCAHO (1999), NCQA (1999) and AAAHC (1999):

- enhances community confidence
- provides a report card for the public
- offers an objective evaluation of an organization's performance
- stimulates the organization's quality improvement efforts
- aids in professional staff recruitment

- provides a staff education tool
- may be used to meet certain government certification requirements
- expedites third-party (insurance) payment
- often fulfils licensure requirements
- may favourably influence liability insurance premiums
- favourably influences managed care contract decisions
- finds new ways to improve the care and services they offer
- increases the organization's efficiency and reduce costs
- develops better risk management programmes
- motivates staff and instils pride and loyalty
- strengthens public relations and marketing efforts
- recruits and retains qualified professional staff members
- develops alliances with other provider groups and health care organizations.

Components of accreditation

A typical system of accreditation (as seen below) is organized around four different components: administration, standards, communication and education, and surveying.

Administration

Of course a system of accreditation must have credibility, and this is usually attained through an upper management structure such as a board of directors or a governing board. The board most probably will consist of representatives of all of the major players in the health care system. For example, representatives from both the government and the private sector would be represented on the board. Professional organizations and societies may also be included on such a board. Certainly, this board would act as the top decision-making entity in the system of accreditation. It is responsible for evaluating survey reports for health care facilities and would render the final decision regarding eligibility for accreditation. Therefore this board is responsible for:

- evaluation of surveyors' recommendations
- verification of information

- the accreditation decision
- the appeal process
- re-evaluation and periodic surveys
- re-accreditation
- accreditation violations/abrogation.

The accrediting organization will have an administration. This component will have a number of activities and functions that are supportive and somewhat facilitative in nature. This component is usually responsible for providing leadership and administrative services to the accreditation process. Specific functions include:

- facilitating the application process
- collecting application and survey fees
- scheduling on-site surveys
- identification and contact of surveyors
- travel arrangements of surveyors
- secretarial and clerical support.
- help desk/customer service, etc.

Education and communication

The second component of the accrediting organization is education and communication. This component is primarily responsible for increasing awareness of the target organizations and their employees of the process and the standards of accreditation. Specifically, this component is responsible for:

- seminars/workshops
- conferences
- consultations and advice
- newsletters
- websites
- direct mailings
- news releases
- marketing.

Standards

The third component is related to the setting and continuous updating of the accreditation standards and the scoring guidelines for measuring compliance to the standards. Specifically, this component will be responsible for:

- organizing the domains (see below)/sections for the standards manual
- developing and setting the accreditation standards and sub-standards
- identifying the documentation requirements for evaluating compliance
- establishing scoring guidelines
- organizing and updating the standards manuals.

Surveying

The forth and last component of the accreditation organization is probably the most important through which the actual assessment of the health care organization is handled. This particular component is usually called the surveying component. Professionals working for this component will be responsible for:

- selecting surveyors
- training surveyors
- scheduling of surveyors/facilities
- organizing site visits
- the survey report and the score card
- the surveyors' recommendations.

The core standards

Depending on an accrediting organization's emphasis, the areas for the development of standards may differ from one another. Also, the type of facility to be accredited has an effect on the type and the "domains" of standards to be developed by the accrediting organization. For example, the Accreditation Association for Ambulatory Health Care (AAAHC) has developed standards in the following domains: rights of patients, governance, administration, quality of care, quality management and improvement, clinical records, professional improvement, and facilities and environment.

For the National Committee on Quality Assurance (NCQA) there is a different focus. During an accreditation survey, managed care plans are reviewed against more than 60 different standards. Plans must also report their Health Employer and Data Information Set (HEDIS) results on 10 different measures and at least one member satisfaction survey. These standards and performance measures fall into five broad categories.

Access and service

Do health plan members have access to the care and service they need? For example, are doctors in the health plan free to discuss all treatment options available? Do patients report problems getting needed care? How well does the health plan follow up on grievances?

Qualified providers

Does the health plan assess each doctor's qualifications and what health plan members say about their providers? For example, does the health plan regularly check the licences and training of physicians? How do health plan members rate their personal doctors and nurses?

Staying healthy

Does the health plan help people maintain good health and avoid illness? Does it give its doctors guidelines about how to provide appropriate preventive health services? Are members receiving tests and screenings as appropriate?

Getting better

How well does the health plan care for people when they become sick? How does the health plan evaluate new medical procedures, drugs and devices to ensure that patients have access to safe and effective care?

Living with illness

How well does the health plan care for people with chronic conditions? Does the plan have programmes in place to assist patients in managing chronic conditions like asthma? Do diabetics, who are at risk for blindness, receive eye exams as needed?

HEDIS

NCQA (1999) is also the leader in the field of health plan performance measurement. NCQA manages the evolution of the principal performance measurement tool for managed care, the Health Plan Employer Data and Information Set (HEDIS), a set of standardized measures used to compare health plans. Today, through employer initiatives, national magazines and local newspapers, many consumers receive HEDIS data in the form of "health plan report cards"

HEDIS sets the standard in assessing how effectively health plans care for acute and chronic illnesses, and includes measures that address many of the US's most pressing health problems, such as cancer, heart disease, smoking and diabetes.

The accreditation process

The accreditation process consists of a "desktop review" of the application and a site visit. Through this process, applicant organizations submit evidence of compliance with accreditation standards, which is then verified by an accreditation reviewer.

Once the desktop review is complete, the organization may be asked to submit additional information and/or revisions to the application. After receipt and review of the additional documentation, an on-site visit will be scheduled. Applicants refer to a specific interpretation guide to prepare for the on-site verification. The processing time for an application, that is the time an application is received at an accrediting organization until the time the accreditation is granted, is approximately four to six months. The actual time frame will vary according to the type of accreditation applied for, the number of standards that are met versus not met upon desktop and on-site review, the number of applicant sites, and the number of applicants in the queue for accreditation, among other factors.

During the on-site visit, a team of surveyors meets with many representative groups from various parts of the health care organization to discuss the processes of care and support function within the organization, as well as, the quality improvement initiatives related to them. The survey team

meets with the health care facility's board of directors, senior administration, care teams and other supporting teams, such as human resources, environment and information management. Most important, the surveyors meet with clients and their families, who are interviewed about their understanding of the care received, their feelings about the quality of care/service, and their level of understanding of their role in the care and treatment process.

In addition, the survey team reviews documentation (for example, policies and procedures, minutes, care plans and clinical records) and visits key work areas to support its observations. In summary, the survey team is invited by the organization to review the quality of care and services provided against nationally developed standards.

After the survey team completes its verification process a report including the accreditation recommendation is prepared and submitted to the accrediting organization for decision-making. The accrediting organization in turn analyses the report and discusses the recommendation, thus making its final decision regarding accreditation. The decision is verified by the accreditation organization's governing board and is provided to the health care facility. If the decision is a denial for accreditation or any adverse decision, then the facility has the right to appeal that decision.

Conclusions

Accreditation has played a major role in the monitoring of health service organizations for over 40 years. The success of accreditation rests with the recognition of it as a voluntary, objective peer review process with self-assessment at its core. Its success also rests with the on-going participation of the multitude of professional groups who all work collectively and collaboratively to ensure that accreditation reflects the common goal of delivery of consistent, high quality care.

It is a process that has the potential of insuring continuous improvement, and institutionalization of quality. Sustaining quality activities are enhanced with certain incentives and accreditation is an example of such incentives. In this era of performance measurements and accountability, a mechanism that encourages compliance to standards such as accreditation is

exactly what this era needs. It is no wonder that countries around the world are becoming increasingly and seriously interested in such an activity.

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Chapter 8

Promotion and sustainability

A.A. Abdullatif

Management commitment

Having a clear and implementable vision is a first important step towards establishing commitment. It is the vision and mission which give an organization the binding bonds and clarity of purpose and existence. Of course on their own, vision and mission are not enough to secure management commitment. This is especially so when they are made without thought and merely to serve as propaganda. Patience and perseverance are needed to involve health staff and partners as well as users (consumers) of health care in the formulation of vision and mission. The benefit of being patient is threefold. First, it allows enough time for change to be effective. Second, the reaction of staff, partners and users towards the changes to be made will be understood and considered. Third, transition is made smooth through consensus-building, which in actual fact accelerates the change process and avoids conflict.

Another requirement for management commitment is the establishment of the necessary structures at each level with revised terms of reference, reflecting the new spirit, the vision and mission as well as the tenets of quality. Teams and committees are essential structures, whether

they are ad hoc or permanent, or executive or advisory to the health management.

Investment in capacity-building is vital for developing skills in order to tackle new challenges. Continuous education of staff reflects a commitment to achieving new tasks. The staff usually demand and need to be trained in new areas of health. The response to this need is reciprocated by involvement and support from the staff.

The structure of the system and capacity-building should be geared to serve an organization's strategic health plan. A strategic plan is an agenda of work which reflects management commitment to achieving quality results.

A strategic plan focusing on users/consumers should be based on the collective wisdom of staff and partners. Communication channels should be opened through formal and informal briefings, group discussions and other forms of feedback.

Monitoring and review of the change process provide necessary information for improvement. Quality improvement standards and indicators must be worked out in the context of the health institution. Though it may sound a bit complicated, there is also a need for "commitment" indicators, which are different from performance indicators. Commitment indicators are a special category with special ways of processing, analysis, feedback and use. These indicators are less quantitative and usually focus on the process elements of the system.

Mission and vision

The vision of a health organization is its guiding star, which directs mission and performance. Vision is principle-driven and is broad and futuristic. Vision is broad enough to direct the mission statement, which is more specific and operational.

Vision should highlight the value system of a health organization. It reflects the collective beliefs and culture of an organization. Within the primary health care approach, several performance principles have been advocated: community involvement and empowerment; intersectoral coordination and action; equity of health care; focus on specific target groups; promotion and prevention; decentralization of management; capacity-building; sustainability; and appropriate technology, for example.

The philosophy of the health organization must be clearly stated. The mission statement is characterized by being concise and clear. The statement is an important written philosophy of the health organization which should be conveyed and understood by all health workers. It should be focused and in clear language. The statement should specify the following three areas.

- *The raison d'être*. Why the health organization was established and exists. What its business is now and in the future. Why it is needed in the country, the district, the locality or a particular catchment area.
- *The target population*. The users of the services, or the customers who are served should be defined. There may be specific programmes targeting different population groups according to their sex, age, social status or risk factors. The catchment area for such population groups is a helpful concept because in some countries it is the building block of the health system, which helps calculate numerators and denominators of health status and economic indicator rates.
- *The services delivered*. The expected product that will benefit the community. The health targets to be achieved in order to help improving the health status of the target group. The type of health care delivered by a health centre or a hospital can be curative, preventive, promotive or rehabilitative. The content of each type will vary according to the level of care, the needs of the community and national policy. At the first level of care the focus is usually on promotive, preventive and essential curative care. In case of referral, the focus shifts to curative and rehabilitative care.

By amply and clearly responding to these three areas, the mission statement will be clear. In this way it will help uniform understanding of the overall mission of the organization and help identify individuals' roles and contributions towards achieving the goals of the organization.

A future vision is a must in strategic management. The starting point for systemic thinking is the future: what we would like to be. Drawing the future picture has to be done now. The picture should describe the main features, characteristics, principles and values of the organization, and the main priorities and outcomes of the organization that will make the aforesaid parameters achievable.

Quality of health care, customer satisfaction and provider satisfaction are three main outcomes to be highlighted in any futuristic vision of a health organization.

A world of warning: mission and vision statements are not hollow slogans or fashion words. They have to reflect an honest commitment. Here are some more qualities embodied by mission statements.

- *Futuristic*. The mission statement should be forward-looking, shifting from conventional methods to new paradigms.
- *Result-oriented*. The statement should explicitly describe the expected outcome the health organization is going to produce (a product).
- *Behaviour-driving*. The statement should empower health workers to strive to achieve the best. The whole organization is mobilizing its potential to attain its goals.
- *Customer focus*. The statement must specify who the customers/users of the health services are and which target groups are most important to focus on. For example we know that in the World Health Organization's expanded programme on immunization, the customers are children under one year old.
- *Making a difference*. The statement should be a starting point for a process of strategic change. In other words the mission statement is a landmark undertaking to start action. It is not an end in itself. In striving to make a difference through changes in the thinking, behaviour and outcome of an organization, the mission statement should focus on the day-to-day activities and realities of the health organization. Time will judge whether the mission has made a difference or is just paying lip service.

Management commitment should prevail throughout a ministry of health's organization: at the provincial directorate of health, district health services, hospitals and health centres. Commitment is expected from all health workers. It is characterized by *strategic and futuristic* conceptualization; *systems thinking* should guide its comprehensive and integrated approach; *leadership* should be built everywhere at all levels of the organization; and *stakeholders* should be involved and represented in the different committees and boards whenever relevant and feasible.

Strategic management: defining organizational identity

Management commitment has to do with the identity of the organization. All health workers should know what is special about their organization. At the individual level, an organization's identity describes how a person is related to the overall identity of the organization. The health worker's job description should match the core attributes shared collectively by the rest of the members of the organization.

Organizational identities vary in terms of the attributes that individuals believe uniquely characterize an organization. Individuals acquire their sense of the identity of an organization through formal briefings, assignments, training and continuing education. Informally, however, individuals get the feeling of their organization through, for example, ceremonies and stories circulating among staff.

The identity of the organization when collectively formulated creates a binding and bonding force for all staff to adhere to and consider in their strategic and operational planning and decision-making processes. The prevailing culture of an organization is a product of its identity. A broad repertoire of cultural features, such as sagas, rituals, ceremonies, anecdotes and even jokes, affects the behaviour of the leaders and managers of the organization. With time the organizational identity is established and sustained through cultural and sociocultural systems. In other words, there is an interaction between the commitment and identity of an organization.

Both top managers and ordinary staff can bring about change in an organization and consequently its commitment.

Top level managers influence change by virtue of their formal power, which can reshape an organization's structure, reward system and strategic direction. On the other hand the collective and enduring work of individuals helps in making top mangers responsive to the need for change. This is especially true in participative and transformational types of leadership. Management commitment is usually made through vertical and horizontal interactions between different departments, levels and currents of thinking. It is processed through debate, dialogue, jokes and meetings (formal and informal). Thus it is incremental, and when beliefs and values are crystallized then commitment becomes a formal feature.

The influence process of the health staff at their different levels is a reflection of the commitment of management, and with time it contributes to itself.

Factors affecting the daily work environment of organization members include but are not limited to: formal organizational structure, the operational distribution of power, reward systems, information and reporting systems, information and reporting systems, formal decision-making processes (e.g. strategic planning, budgeting, capital investment, human resource planning), staffing assignments, standing and ad hoc committee structures, definition of role models and organizational ideology. The more invasive a leader is in exercising influence on the work environment, the more these factors are likely to be changed and to a greater degree. An evolutionary approach to fostering learning and change entails gradual adjustment to such factors. By contrast, radical alteration usually produces organizational revolution.

Reward and recognition

Human nature expects and strives for rewards and recognition. Rewards are applied during recruitment, retention, motivation and career development. The traditional form of reward known as carrot-and-stick is a well known practice. The stick is a symbol of threat and insecurity haunting an organization; it disseminates fear and insecurity and threatens loss of job, prestige, income and self-esteem. It is also common in autocratic and authoritarian types of administration. The problem with such a system is that reward is based on favouritism, politics and ethnicity. Frustration prevails and, with time, brain drain. The staff staying behind are usually demoralized or indifferent. This situation is detrimental to any organization and consequently to the public good.

In a confident organization, reward systems can be established, monitored, maintained and improved through a dynamic process through fulfilling the following criteria.

A clear *policy* for reward should be prepared. The policy document should clarify expectations by both the organization as well as the employee. It should be made known and accessible.

A representative *team* comprised of representatives from all interested parties should be entrusted to periodically review and improve the reward programme.

Criteria for reward should be established and disseminated. Based on these criteria, *indicators* should be established by the representative team, monitored by the quality improvement unit and reported to management for review and action.

Provider satisfaction surveys should be designed and conducted periodically. Feedback should be given to interested parties in addition to the administration. It is through dialogue and explanation, especially on a personal basis, that trust and understanding of employees can be maintained. The World Health Organization's Regional Office for the Eastern Mediterranean developed in 1995 a provider's assessment tool for adaptation by countries of the Region. This tool is a broad one covering several areas of provider satisfaction but still should prove useful for quick surveys on provider satisfaction.

Periodic discussion of the reward system can be done by using *focus group* techniques, making use of information gathered by surveys or cases of appeal or complaints through staff associations or individuals. Complaints are likely to be less common in a healthy environment and under an empowering leadership where staff are allowed to voice their opinions freely and take independent actions when necessary.

Success stories should be *celebrated*. This not only boosts staff morale and confidence, it also brings about enthusiasm to do more and to excel.

A *budget* should be allocated for rewards. This budget should be used not only for incentives but also for surveys and assessment of the reward system.

The range of reward and recognition

The range of reward and recognition depends on the prevailing culture, style of management and leadership. The types of reward are as follows.

Pay staff well

This is important. But if it is the only form of reward it may not ensure nor sustain ownership and sense of belonging. Monetary incentives may create a materialistic and opportunistic search for better pay elsewhere if other forms are not considered.

Treat staff well

An additional form of incentive that fulfils emotional needs. It creates a more humane and encouraging environment.

Use staff well

Human resources development is the main focus of such a reward system. It achieves staff fulfilment.

Value whole staff

The interest is in the whole person. It strives to establish self-esteem. It is a mixture of all the above in addition to trust and responsibility. The collective potential of all staff is made use of. The highest value is embodied in staff, who are considered as the main asset.

The autocratic type of leadership usually focuses on the monetary reward scheme where the leader runs his unit/organization as a dictator with virtually no input from subordinates; the transactional type treats and uses staff well. The latter is leadership style at its best, with the valuing of staff as individuals and as groups, ranking them as the crucial infrastructure of the health organization—providing them respect and appropriate authority. This latter is clearly reflected in the empowering style of leadership.

Developing a culture that rewards creativity and motivates

Reward and recognition begin by developing values to guide organizational behaviour and expectations of staff, demonstrating the benefits to them. It is essential to understand what motivates the staff in an institution. Incentives, whether materialistic or moral, should be regular and varied. The ultimate goal of reward and recognition is to ensure

improvement in the performance of a health organization as well as to benefit career development of staff.

The traditional system of reward and recognition has fallen short of fulfilling requirements for recruiting, retaining, motivating and satisfying competent people. Traditional systems are centralized and are usually punitively driven. Job descriptions should mention opportunities for career development. It should recognize career development as an important component of reward and recognition.

Dignity and having high self-worth allows workers to take risks and make contributions. Creating the climate and opportunities for meaningful work will release the potential of the workers, encourage autonomy and enhance new skills. The culminating reward value is when individuals strive to express themselves through work, bring meaning to their lives and build self-esteem. A culture of pride and self-esteem prevails.

In other words, every health leader and manager should think of value-driven areas such as survival, relatedness, pleasure, information, mastery and play (joy). Celebration is an example of play to keep reward and recognition in the minds and hearts of staff and managers. Leaders should determine the right type and right mix of incentives and motivations in the organization as well as the right timing.

Leadership

Describing leadership

Leadership is value-driven, where these values are shared, forming the vision and the main driving force of an organization or institution. Leadership is continuous, adaptive to new challenges and changes, and is creative.

Leadership is not an isolated or episodic heroic action by health managers or workers; it is rather a conscious, deep-rooted and continuous attitude and pattern of behaviour, striving towards greater achievement.

Leadership is based on the sharing and ownership by health workers at all levels of the same vision and values. Human resources are the main agents and users of leadership.

The sustenance of such values is indicative also of the effectiveness of leadership.

It is the nature of leadership to grow and spread among different health workers and managers. A critical mass of followers and risk-takers must be formed to bring about leadership; it is not a once-and-for-all spark but a continuous energy current which keeps an organization moving in the right direction and speed.

Leadership is like a wave—it may have peaks and lows but it is always in motion and has direction and force. It is always enabling and moving to the desired destination.

Leadership has the ability to attract, bond and transform the implicit strength of an organization/institution into explicit creativity.

Leadership creates trust, confidence among health workers, common interest, dignity and determination. A sense of rightness prevails where the interests and rights of the individual match those of the group.

As such leadership focuses on integrity, which is developed through commitment-building and example-setting rather than by directives. By virtue of its missionary spirit, leadership has to be initiated, propagated, accepted and practised. These stages overlap. In the early stage, leadership is confined to individual initiatives, but at later stages it is widespread, and "followers" are enabled and herald change all over.

Characteristics of leaders

Leaders are characterized with certain attributes which are all important; however, one is paramount at any given moment.

In transforming health care organizations, effective leadership for quality is essential. The following 14 characteristics of a leader are essential for bringing about needed change and improvement in a health institution.

1. *Having vision.* Able to envisage a future, better organization in which all health staff work is optimized and quality is the number one goal of each.
2. *Being an agent for change.* A prime mover and activist obsessed by action. Exhibits personal skills and encourage others in the health institution to think strategically.

3. *Information sharing*. Information is power. Sharing all types of information to empower staff and provide them with up-to-date and authentic information to encourage participation.
4. *Creativity and innovation*. Forthcoming with innovative and creative ideas throughout the organization. Promotes creative problem-solving skills for managers and employees.
5. *Managing uncertainty*. Leads flexibly but diligently with hope and confidence in the organization at difficult times in order to face and overcome challenges and ambiguity.
6. *Social accountability*. Strives for the right balance between cost and effectiveness of health care as well as the means to provide access for all citizens, meeting the health care needs of communities; truly being customer-focused rather than provider-focused.
7. *Being people-orientated*. Believes in the collective intellectual power of people in the organization. Fosters teamwork and collaboration and empowers people so that they can contribute to organizational success.
8. *The driving force is the customers' values*. Listens to colleagues and customers. Develops action plans to exceed requirements and delight the customer. Encourages and reinforces customer focus at all levels in the organization.
9. *Visibility*. Available to and interacts with other staff members, especially at times of need; builds commitment and loyalty to the organization. This also boosts the morale and confidence of the providers and consumers of health care. In this way, on-the-spot recognition of devoted providers enhances their positive attitude and indicates to customers the level of personal involvement in achieving customer satisfaction.
10. *Commitment to education and training*. Sets different learning paces and tones, especially learning-by-doing, and institutionalizes continuous training and capacity-building of staff.
11. *Decentralizing and delegating*. Focuses on disseminating power, information and knowledge, especially downwards.
12. *Strategic partnerships*. Fosters strategic partnerships with staff and users in order to ensure their better relationship and performance.
13. *Periodic self-appraisal*. The aim of such assessment is to develop a common plan for improving performance by staff at all levels. The plan

should be communicated, discussed, understood and approved by all parties concerned.

14. *Fecundity*. Produces other leaders, not only followers.

Features of leadership

In many textbooks leadership is compared with management in order to show how different the two are. Naturally they should not be mutually exclusive. But as is often said, a manager needs to be a leader but not vice versa. A leader leads at any time and in any position. Needless to say that leaders have more opportunities to change when they hold a higher rank, consequently wielding more power.

Leadership is measured against environments and should be rather addressed in "context". In comparing different patterns of leadership we are in fact assessing the focus or degree of leadership in a specific context. Leadership can be described as a continuum governed by environment and time. Thus types of leadership can be developed, analysed and studied through analysis of the complexity, timing and level of the organization/institutions.

An important feature of leadership is its trend and direction, as exhibited in Figure 8.1. At one end we have autocratic leadership, which is manifested by ordering—making all decisions for subordinates. Moving across the continuum towards a participative style, one notices more involvement and interaction with others, particularly more team orientation and consultation prior to making decisions. A participative leader seeks broad input and collective wisdom in order to secure involvement in the change process. At the other end of the continuum is empowering leadership. An empowering leader is a more outgoing, delegating, trusting leader who encourages those on the front lines, dealing with the community, to make quality decisions. This type of leader believes that every staff member is an asset. He or she focuses on growth through providing counselling, coaching and opportunities for career development.

Figure 8.1 also invites the reader to think of management and leadership as complementary rather than exclusive. That is to say that it is important to train managers to be leaders. This is possible if there is willingness and a conducive environment.

Management style

Autocratic	Participative	Empowering
Ordering	Interacting	Delegating
Deciding on behalf of subordinate	Consulting before decision taking	Trusting
Controlling and directing	Adapting and flexible	Counselling and supportive
Efficiency the main concern	Effectiveness first	Quality performance
Logic, mechanical and formal analysis	Sensing and innovative	Creative and artistic
Specific and time-bound	Summative	Synthesis and relations
	Long-term perspective	Strategizing and time-free

Figure 8.1. The continuum of leadership

As shown in Figure 8.1, the autocratic style has a narrow mandate to control and order staff to do things without their involvement. It is like a military system.

Empowering leadership means openness to the ideas of other members of the team. It is about sharing organizational power and giving autonomy and discretion over tasks to employees. Empowering leaders build relationships by acting as coaches and mentors. They use reward and recognition to change limiting behaviour. The transition to empowering leadership is difficult because leaders are trying to accomplish the transition themselves. It is very easy, even when empowering skills have become part of your management style, to regress to your old style of operating.

Leadership and urgency of quality improvement—different settings, different patterns of leadership

Constraints in the Eastern Mediterranean Region differ from one country to another. Generally speaking, however, constraints are found in the scarcity of resources and the infrastructure or the organization, managerial processes, financing mechanisms and other process-related actions within a health care system. These constraints can result in poor quality of care.

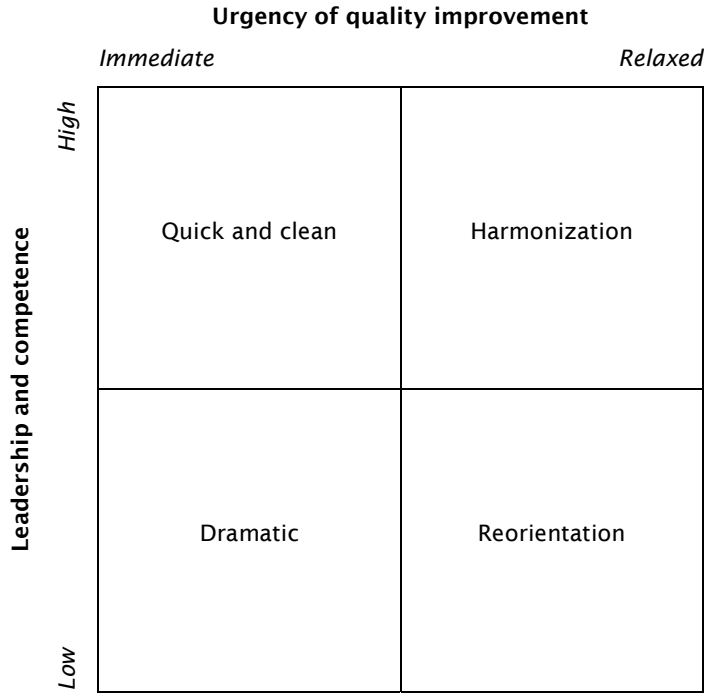

Figure 8.2. Contingency matrix

Management is weak almost all over the Region. This is sometimes coupled with lack of technical competence, especially at the first levels of care. Improving administrative and technical competence is a must. It is only a question of whether to change immediately or at a slower pace. The commitment to such change is the responsibility of leadership, especially when we know that managerial capabilities in the Region leave much to be desired.

In order to help conceptualize how to address these constraints, a contingency matrix (2 × 2 table) is proposed (Figure 8.2). The two main factors to be studied by leaders at a given level of care are first *how urgently* improvement is needed. Is it immediate or can it be done at a later stage? How urgently change is needed is determined according to the style of leadership in operation at that level of care. In judging urgency, a leader should also think of opportunities and short-term and long-term implications. The second factor is the availability of technical and administrative

competence at the same level of care. Again, adjudication of competence can be made by looking at overall performance criteria, such as coverage, satisfaction, targets achieved, cost–effectiveness analysis and specific management surveys. Of course the grading of competence is made in accordance with the health agenda in front of the management. It is not an absolute judgement; rather it is relevant to the prevailing health problems and how far successful the management is in tackling them. This last point leads us to remember that the diagnosis of competence should be made periodically as health priorities and factors contributing to them change with time.

From the contingency table, four situations will evolve as follows when we range the two factors (urgency versus competence) against each other.

"Building harmony further"

The first situation is where technical and administrative competence is high and at the same time the leader assesses the need for change as not that urgent.

This condition is usually faced in health organizations with high quality performance. The organization has a culture of widely shared values, efficient recognition and reward systems, and an effective and efficient decision-making process. There is a degree of sophisticated thinking prevailing in such organizations, thus demanding thoughtful incremental additions by leaders based on sharing.

The product of leadership efforts in such a setting is:

- recruitment and retaining of high calibre talented staff
- commitment to quality
- creativity and continuous ability to meet challenges.

Change is made through active involvement and participation of staff in strategic decision-making.

When such a situation is found in a country or even in isolated health institutions, the leadership role should be subtle, continuous and low-profile or anonymous. This is a condition where use should be made of expertise of staff.

The interaction with leadership should reach all levels and individuals. Staff are the real assets of an organization and should be involved to make the best use of their talents.

"Quick and clean"

The second situation is when, despite availability of a high level of technical and administrative competence in a health organization, there is an urgent need for change. This urgency may be due to new epidemiological, economical, social, political or technological challenges.

The main factor is time: improvement has to be made immediately. In the Eastern Mediterranean Region, this situation is seen in countries which have embarked on privatization of health services without enough prior preparation by the public sector. It is also seen in managing epidemics and in hospitals which have to adjust to new technology and techniques (such as one-day surgery).

As time for change is short, responsible decisions need to be taken by the executive management with selected key staff members. Some form of "beehive" emergency committee (with representation from all key areas of the organization) should diligently analyse the situation and take decisions. The executive management explains to responsible key health officers and key staff the necessary steps to be taken. Targets should be set to achieve change, and all of the organization should be geared towards the process of change. Focus should be made on how to make the organization cope, response and adapt to emerging challenges and changes.

A strategic new vision should be developed. The implementation of such a vision should not be difficult thanks to the high calibre of the staff.

Leadership here is visible, direct and represented in a core dynamic group including the top management.

"Reorientate and redirect"

The existing technical and administrative competence is insufficient and weak but the need for change is not urgent. This situation is seen sometimes in rural areas where the health staff are not motivated, or training from the start is weak. In such areas, the rural population has few alternatives to the existing health services. Leadership is challenged by a *fait*

accompli where demoralized, frustrated and abandoned health staff also lack necessary technical and administrative competence. The leader has to be persistent and patient. Focus should be made on selecting key officials to launch change, as it will not be possible to coach the majority of staff. For the leader the choices are limited. The only way of gaining credibility is to rid the organization of redundant workers and replace incompetent managers. This is not an easy task. However it has to be made clear that there is no choice, and time is still in favour of change.

"Dramatic action"

This situation is rather confrontational. The leader assesses the situation as grave because technical capability and competence are worn out and cannot solve current health problems while change is needed immediately. This is a situation where "revolution" is needed to address the enormous impending threats facing a health institution or organization. It is a situation where health services have to deal for example with dwindling resources and incompetent (sometimes corrupt) management. Such a catastrophic situation needs a hero. Leadership should have new blood. There is no time to waste here for learning, as the workforce first needs its capacities and morale raised. Appointment of new key officials could be vital for the survival of the health organization. This is an emergency case; the leader must convince all concerned that it is possible to get through this crisis. The leader has to look everywhere, especially at the top managerial levels, to convince, urge and work together to save the organization. This situation, though gloomy, unfortunately is not uncommon.

In the above situation, the leader must be forthcoming and empowered by the top management to take the necessary action. Risk-taking skills and assertiveness are paramount in this situation, and such a leader must assume a decisive role in addressing the situation at hand and make the right decision in a timely manner.

Tools to assess leadership

An organization, like a living being, must adapt to changing environments, and so must its leadership. Leadership may not easily render itself to evaluation. This is so not only due to the complexity of its nature,

but also to the abstract character of some of its aspects and the subjectivity of others. However, well worked-out reviews can provide a fairly good idea about the leadership status in an organization. Knowledge, attitudes and practices surveys, observational studies, social and performance multivariate analysis, comparative input–process–output analysis, trend analysis, sustainability and potential analysis are all useful tools.

Simple surveys of the availability, compliance and performance of the vision and mission of an organization provide an idea of its leadership. So do quick surveys on providers' satisfaction, and the interaction and delegation of power and its effectiveness. However, diagnosing the leadership in a healthy organization needs a multidisciplinary team with representation from different disciplines: epidemiology, public health, health economics, behavioural science, health management, and so on.

A starting point in assessing someone's style of leadership is to seek the place where that person is in the continuum of leadership shown in Figure 8.1. The shift of style to the extreme right or even to the left is governed by the circumstances of a health organization and the administrative hierarchy of the leader. As discussed under patterns and applications of leadership styles, there is a need to use the right style of leadership at the right time. Naturally, a change in style as required will create some difficulty in assessing leadership. But it is also common sense that, for example, a rigid autocratic style will fail to empower when this latter is most needed. In this case assessment of leadership is easier and a selection of the right leadership style becomes more dependent on the current situation.

The following questions will also help place a leader at a certain point on the leadership continuum.

- To what extent are power, knowledge, information and rewards pushed downward in an organization to the lowest possible level, where the community interface takes place?
- To what extent may all employees think for themselves and address customer issues on the spot?
- How much democracy does the organization have?
- How bureaucratic and hierarchical is the organization?
- How is power distributed at the different levels of care?

- Are people expected to follow the line process, seeking permission from others in the chain of command before any action can take place?
- Are there punitive or rewarding measures when things do not go the exact way things were planned?
- Is there any investment in education as a way to demonstrate commitment to the employee?
- How far do senior managers set examples in the organization?

The above queries need to be qualified further and standardized, to be used periodically in assessing leadership development.

A leader's agenda to stage leadership development

In health organizations, as in many other social systems, leadership has to plan and design its activities. Leadership development is not always easy. From a sociological point of view, concepts are valid when relevant. Concepts have no absolute reality and are subject to change partially or totally with time. Leaders have to choose the right time for launching change and to stage their leadership role.

The application of leadership stages is based on the judgement of the leader. The judgement will depend on the urgency of quality improvement and change and/or the calibre of health staff, as discussed above. It varies also according to the prevailing political and socioeconomic climate. For example, when health care is in crisis, extraordinary leadership is required. In cases when the goal is restructuring, organizational renewal and balancing financing and provision of health care, the leaders must exert high levels of performance. The following steps require great skills on the part of leaders at all levels. In the following sections skills of leadership are highlighted to bring change to an organization. The list of skills should be used intelligently, moving from one point to another and coming back when needed in a dynamic rather than in a consecutive manner.

Pioneering a new paradigm is a first step for introducing change. Leaders challenge existing processes by subjecting them to critical review and propose new ways for improvement. They explore both implicit and explicit systems. As cognitive agents, leaders perceive new horizons which

unveil the ambiguities and uncertainties of disconnected techniques and information. In this way leaders can bridge the gap between different currents within an organization and outside it. Leaders thus demonstrate the ability to take risks, innovate, experiment and support creative ideas. They lead by seeking out change and new ways of doing things. They make use of experiences available in an organization by listening to and assimilating the various experiences, then formulating relevant and implementable ideas in order to enhance quality improvement.

Leaders with perseverance construct a cognitive infrastructure, inspire other staff members and enable them to own the new vision. Leaders portray their proposed new models through informal and formal contacts. They choose the right time to sell their ideas. Their power to convince, interpersonal influence, reputation and integrity add value to their innovative model. The initiatives and creative ideas of leaders cannot be simply incremental modifications based on ideas found in existing health domains. They should be groundbreaking, genuine, challenging, proactive and shared. They draw a powerful picture of future potential and attract followers to sustain the new vision. They build hope and excitement about a better future.

Leaders encourage collaboration, build teams and empower others to act. Leaders can use several techniques, such brainstorming and scenario-planning, so as to generate a creativity process to challenge existing conceptualization.

They emphatically build capacity for decision-making down in the organization to the employees who interact with customers. The aim is to develop a critical mass where it matters most. Such a critical mass will own the new values and vision and will form an informed, empowered workforce**.** Such a workforce is not formed of followers but of potential leaders.

Setting the example and creating culture. Leaders at this stage demonstrate their commitment and perseverance towards bringing about the change they believe in. Practice at this stage is based on shared values. The daily behaviour of the health staff reflects the new culture. The new values are practised as routine in all departments and at all levels, and ambiguities are clarified and uncertainties are revealed and dealt with. Leaders strive for quality improvement with an open mind and through power sharing.

Action and change. This is the stage when the change process is institutionalized. Continuous improvement is the aim of every health worker. Managerial processes are guided by collective wisdom and practice. Results start to be seen, and leaders give the organization the heart to carry on even when difficult times impede progress. They give frequent feedback to their followers and celebrate success. These leaders also admit their mistakes freely. Monitoring of progress is an inbuilt feature of quality improvement. Without leaders who are willing to assess their style and make the changes necessary to provide leadership, organizational transformation is not possible. Leaders should ensure at this stage monitoring and evaluation of progress. This is in line with the principle of quality that is continuous improvement. At this point, a new review of the health organization is due, and the cycle goes on.

Examples of common problems in the Eastern Mediterranean Region to be addressed through leadership development

The primary health care systems in the Eastern Mediterranean Region differ in their performance from one country to another and even within the same country. There are several problems facing health systems which are amenable to solutions through quality assurance techniques and methods. The following is not an exhaustive list, and not necessarily all of the problems are present in one setting.

Underuse of the first level of care is an indication of low quality of care causing overload to secondary and tertiary levels of care. *Long waiting lists* are also common due to overload or lack of organization skills. *Overuse* is sometimes reported, which eventually affects quality due to unnecessarily straining resources.

Low productivity is found in some facilities and institutions. This could be due to underuse, or lack of or unavailability of needed resources, and leads to spending more time than necessary per patient. Sometimes low productivity is simply because of lack of supervision or lack of proper planning.

Waste of resources is not uncommon, and there are many examples in both human and material resources. It is estimated by some experts that in well managed enterprises there is waste to the value of 25% of revenues due

to poor quality. Thus the cost of poor quality can be high when things are not done properly the first time. It is not common to find hospitals which are systematically measuring waste and acknowledging this waste. Thus there is a missed chance to diagnose and remedy this common happening.

Habitual overprescription, wrong diagnosis or so-called therapeutic diagnosis are documented examples of *misuse of drugs*. If supply of drugs does not match the epidemiological and socioeconomic need, we have another example of waste. It is not uncommon to find mismatching between human and material resources; for example a physician may be doing the job of a medical assistant with little equipment and poor facilities available. In other cases equipment goes unused due to lack of trained human resources. The picture becomes more serious when aggregated at district level or higher up.

As a result of any of the above, the *customers begin to be dissatisfied* with the health services. People start looking for alternatives, and with time the health services fall into disrepute, a reputation difficult to amend later. Today, information on alternatives is easier to obtain due to better communication and standard of education in general. Quality assurance thus can safeguard against poor images of health services through making them more cost-effective and responsive to community needs. If health administrators and providers fail to meet the challenge, then people will eventually bring about change, which will make the systems more transparent and accountable.

Health care providers when confronted with logistic or administrative constraints (bureaucracy) become frustrated with time. Such frustration can be also due to lack of career development, negligence or frequent confrontations with the community due to lack of essential supplies.

Unclear or inconsistent health policies coupled with lack of continuing training eventually lead to *demoralization* of health workers. With such low morale no commitment on the part of the health providers is ensured nor are the health services trusted by the community.

Institutionalization of quality health care in the Eastern Mediterranean Region

The different socioeconomic circumstances of the countries of the Eastern Mediterranean Region call for adopting different scenarios in promoting and implementing, and hence institutionalization of, quality assurance. The following pages will provide a regional perspective and will try to show common possible entry points.

Exploring the macro climate affecting the institutionalization of quality health care

Situation analysis

A situation analysis should be carried out which details the various factors that affect quality improvement. Special reference should be made to prevailing values, work organization and style, creativity, diversity of the system, communication horizontally and vertically, career structure and support, training and continuing education. The different constraints and problems mentioned below should also be studied, especially with regard to errors, rework and waste. These constraints are not necessarily present in all countries of the Region; they may be found at the first level of care and first referral level. These levels are the two most important in any health care system, where about 80% of health problems are dealt with. For the sake of institutionalization of quality health care it is important to know where the weaknesses are and threats are.

Bureaucracy

It is well known that managerial set-ups in the Eastern Mediterranean Region are weak, centralized and may not be able to cope with newly evolved ideas and concepts. Such management will not usually respond to change easily. Quality improvement, to thrive, needs delegation of authority and decentralization.

Bureaucracy in general is characterized by complex and lengthy procedures which eventually prevent appropriate timely actions, leading to a high failure rate. Bureaucracy often lacks good communication and links with the health care system’s partners, mainly community members. It is not

transparent or interactive. Poor communication is the single most detrimental factor to continuous quality improvement. Unfortunately poor communication is a common problem facing health systems and their services. This is true intrasectorally as well as intersectorally. Bureaucracies often only have vague ideas of community needs, and, more than that, these assumptions are usually adhered to over long periods, leaving little room for improvement.

Complexity of quality programmes

Diverse experiences of quality projects in the Eastern Mediterranean Region and their interpretations have made the concept of quality improvement difficult to grasp. The misconception of considering quality improvement as luxurious, costly and dependent on high technology adds to the reluctance to accept it. Leaders will realize that quality improvement, as a relatively recent phenomenon of only some 30 years with various schools of thought, renders itself even harder to formulate. Thus quality improvement needs a lot of perseverance and patience. It is also important to note that conceptualization of quality varies from one culture to another.

Lack of institutional resources

To embark on quality improvement, an optimal level of resources is essential. It makes little sense if quality improvement programmes are launched without securing the human and logistic resources as well as the infrastructure. This does not mean that quality is costly but simply that quality needs investment, which is cost-effective in the long run but may show few short-term gains.

Another institutional resource which is important for the smooth running of quality health programmes is reliable data. This factor is unfortunately always a major constraint, especially if data are not desegregated, timely, complete or accurate. Data on user satisfaction are scarce. This is usually coupled with a dearth of consumer rights organizations, especially those guarding health rights.

Guarded conservatism

Guarded conservatism is either professional or political. In both cases it may be based on vested interests or lack of clear understanding of the concept of quality improvement. Both public and private sectors may feel threatened by quality improvement, which may at times create professional as well as political reactions. Quality is based on continuous improvement and consumer satisfaction. Any traditional monopoly on decision-making will have to be replaced by transparency and information sharing; and professionalism has to accommodate teamwork and flexibility.

Lack of models

The concept of quality improvement is relatively new. The emergence of different conceptual models imported mainly from industry did not give the health arena enough time for practice or assessment of what is the most suitable model to follow. We are still in the experimental phase with quality experiences limited to mainly clinical fields, especially in hospitals, and predominantly borrowing experience from the developed countries. Leaders may need to study the experience of drug and food control to develop a model of quality improvement for primary health care.

Political commitment

In order to ensure sustainability and institutionalization, central and local commitment to quality improvement should be sought. Creation of expert and/or advocacy bodies should be envisaged. Reactivation of bodies responsible for quality improvement should also be tried. At this stage the main issue is how to make quality improvement visible.

The "why" of quality assurance

It is vital for advocates or implementers of quality to possess a full vision of the rationale and the reasons for embarking on a quality improvement approach. The mission of quality, whether it is for control or assessment or improvement, should be well spelt out. The purpose may be to increase efficiency and effectiveness and improve professionalism or to reduce risks to health service consumers. It is evident that this will vary

according to different formulations of quality, but the most important thing is that one should be prepared to answer this question.

Formulating a strategic plan for quality improvement

As an interpretation of the strategic thinking in support of quality improvement it is essential to develop a strategic plan in order to institutionalize quality improvement. The extent of the plan can be a national undertaking or a limited one. The plan can be prepared in order to improve the quality of a service such as maternal and child health; an institution or facility; a discipline such as nursing; or a system such as a district health system, or one of its subsystems such as laboratory services or drug supplies.

Capacity-building in quality improvement

Though capacity-building may be part of the strategic plan it deserves to be given special emphasis in that quality improvement, with its varied methods, will have to start preparing training material and methodology and initiating educational change. The training should be carried out using the team approach. Training in quality improvement may also need tedious preparation and great investment, demanding attitudinal and technical skills.

Organizational set-up

Organizational set-up will depend on how widespread a quality improvement scheme will be in a health system. There will be a need to develop existing structures that can be responsible for quality improvement. In other words there is a need for a structure to continue advocating and to provide administrative, financial and logistic support as well as to monitor the progress of the quality improvement programme. If necessary a new structure could be created. However the best option would be to integrate quality in the different departments to become day-to-day professional practice.

Establishment of team spirit and teamwork is one outstanding outcome of the quality improvement concept. Whatever organizational structure is upgraded or created, it has to emphasize the idea of teamwork. All possible efforts should be made to ensure that the organizational structure works in harmony as one group.

As a corollary of building teams it is also important to reflect in the organizational set-up the dynamic interaction between the main three partners in quality, namely the health care providers, the health administrators and the consumers/community. This has been touched on earlier in this chapter.

Development of local capacity in quality is a structural activity. Use of information and, before that, improving its collection, processing and analysis, is a must in order to effect quality. Feedback mechanisms from within and outside the institutions should be designed.

Quality cycle

The operational aspect of quality programmes, whether we are talking about a level or an institution, falls into a continuous and dynamic cycle with three main features.

The first feature is the design of quality, which will focus on planning through teams and be based on problem-solving. The planning of standards should be the responsibility of the local institution or level and should be in line with the national health norms, policies and priorities. In the design of quality of health care, communication between the local and central levels as well as referral and feedback should be ensured as a means of sustainability. It is important to re-emphasize that good communication is a must in any quality programme. The design and sustainability of a quality programme should be built on the dynamics of learning by doing.

The second feature is the monitoring of quality. Desegregated data from the various components of the programme need to be monitored. This is more of a process activity, in order to improve implementation. Under the monitoring feature there are various methods (performance measures, indicators, consumer feedback, use rates, etc.), all of which should ensure that preset standards are further worked out and detailed to include operational indicators. Such indicators are obtained through analysis of data that have already been collected. The operational indicators tell us about the outputs and the process, as well as the inputs. How much we have achieved can only be ascertained through monitoring quality. It is worth mentioning here that we are talking about improving quality and that means we are ready

to change/update our standards. This will necessitate continuous review of our monitoring process.

The third feature in the quality cycle is improving quality. The end product of the cycle is to attain better health status. The various indicators which were used should provide for new opportunities and initiatives and take necessary action for the redesigning of the quality assurance programme. The cycle will then go on endlessly.

Dissemination and documentation

"In God we trust; all else must be documented". Based on this principle, all activities in quality assurance and improvement must be documented for future reference, verification and standardization. Lack of documentation may cause misinterpretation and loss of due credit for achievements. Documentation of activities and accomplishments is therefore necessary to build a credible infrastructure and to share with other organizations and programs. The process of disseminating information and the sharing of results are paramount to the successful and sustainable institutionalization of quality assurance and improvement efforts.

Another important and related issue is research in quality. Any quality assurance programme is very much related to research and development. Research is mainly concerned with finding the "right things to do"; a quality improvement programme seeks to "do the right things". That is to say the two are complementary and sometimes overlap. It is of great help to a country's nationals' drive for quality to share experiences, success and failure to build on a quality assurance culture. Research entails the processes of formulating queries and scientific questions related to procedures, results or actions, then identifies sources of data to answer these questions, collects and analyses them, makes appropriate inferences from the results and then reports them. All of this is important for sustaining improvements.

A systematic approach

Exploring quality improvement through a systematic approach is an entry point for studying the requirements of institutionalization of quality. Institutionalization will depend to a great extent on the available strengths

and opportunities that can be exploited when a local health system is explored.

The literature on quality mentions three main dimensions of quality improvement, namely structure, process and outcome. When these are applied to a primary health care system such as a district health system, the following scenario can be conceptualized (see Figure 8.3). The inputs necessary for developing such a system include all types of resources, human and material, as well as technology, knowledge and established health care norms and standards. Such inputs are not enough *per se* to ensure quality of health care. It is only when processing such resources—how they are organized, managed and put to use—that they can deliver the desired outcome. These resources are harmonized through planning, career development and technical support. Delivery of a health care programme encompassing promotive, preventive, curative and rehabilitative aspects is also part of this process. A sound health care system ensures financial, geographical and social accessibility.

The third dimension of quality is outcome. This is represented in the systematic approach by outcome and impact. The outcome of the processing of inputs is improved health status and a prevailing culture of quality assurance, which eventually will lead to a better quality of life and better overall development. With such quality outcomes, individual and community satisfaction is obtained.

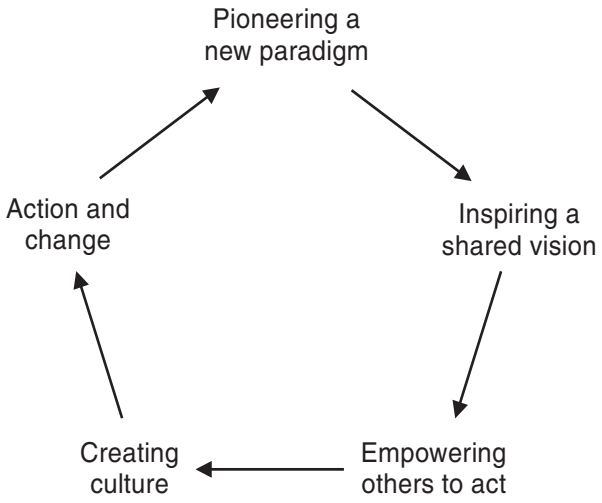

Figure 8.3. Structure, process and outcome as applied to a primary health care system

This scenario can be facilitated through a systematic approach, integrating quality and its assurance in functioning health systems.

For the sake of simplicity, quality improvement is considered to come in three interrelated phases: quality promotion, quality monitoring and quality intervention. In the review below, mention will be made briefly of the techniques, methods and instruments used for quality improvement. It is expected that the reader will refer to other chapters for more details.

Quality improvement will take different forms according to the level as well as development and organization of the health system. There are four major elements to consider when quality of primary health care is to be institutionalized. In the section that follows, these four elements are discussed in relation to the three main components of the quality cycle, namely advocacy, monitoring and intervention (design or models).

The first of the four elements is social and economic status, which will determine the equity, the availability of consumer rights and how far technical cooperation among developing communities is developed as measures for advocating quality. Quality monitoring will be based mainly on cost–effectiveness, and includes medical, social and economic parameters. As for the interventions, they will be mainly through the health development structures functioning in the different local systems, such as councils, development committees and nongovernmental organizations, as well as public and private enterprises.

The second element, which effects institutionalization, is national health policy, with its commitment to advocate quality and clear vision of why quality should be sought through strengthening existing bodies dealing with quality of health care and/or creating new ones. Support of quality monitoring through national health policy can be through strategic planning, identifying the strengths and weaknesses of the whole system; through core groups at national levels who will assess progress; and through establishing accreditation of institutions. In this regard, quality interventions will need legislation as well as leadership capacity-building.

The third element is the creation of a culture for quality improvement. For quality to thrive we need to develop structural and behavioural support, through which quality becomes part of professional daily practice. This will be further strengthened by decentralization and autonomy, promoting

ownership by both the providers and administrators, thus creating a new value system in favour of quality assurance.

The fourth element for ensuring institutionalization is the competence of the primary health care delivery system. We consider this aspect in great detail because the health infrastructures in the Eastern Mediterranean Region are so varied. For advocacy of quality in all levels of care there is a need for orientation, training and research and development as well as leadership and career development. Monitoring of the delivery of quality health can be institutionalized through adopting and using experiences of other countries. For example, stratification of health centres proved successful in Indonesia (categorizing different centres by geography, population size and level of sophistication). Certification, licensing, reviews, performance tools, cycle time and facility operation cost per capita are commonly used in various developed and developing countries. Another tool could be the "Best District", which was used in Zambia. In this tool certain measures or indicators for different processes, structural elements and outcomes are identified and measured to assess the level of achievement of any district in those areas. The WHO Regional Office for the Eastern Mediterranean is also developing a primary health care appraisal tool which is both diagnostic as well as informative, in order to ensure sustainability of quality of care.

There are many interventions and models that can be used to deliver quality primary health care. However at this point organizational structures should focus on developing teams as well as systems based on decentralization and integration.

Such interventions will make use of expert panels, benchmarking, different managerial methods such as design matrixes and charts.

Partnership

Improving and institutionalizing quality call for partnership of the different parties involved, whether they are providers or users of quality services. Accordingly different forms of quality evolve.

Partnership could be within a health institution and/or outside it. The flow of information, decisions and action within a health institution enables it to form partnerships with different health departments. At the same time partnerships with other relevant partners such as users of health services are

important, as they are not only consumers but also as partners in setting priorities and goals.

Surveys and interviewers of providers and users are well known tools for assessing and activating partnerships. But such tools are limited in ensuring partnerships for future action. The usefulness of these tools depends on the type of leadership prevailing in a health institution. Participatory and empowering styles of leadership can make the best use of such surveys in addition to other more active and involving techniques such as focus group techniques.

Partnership is needed with other sectors that are related to health, such as the ministry of education (for health and school health promotion), the ministry of agriculture (for nutrition- and water-related diseases such as malaria and schistosomiasis) and the ministry of municipalities (for water and sanitation issues).

Partnership with users and related sectors brings several benefits to health institutions. It can provide sustainability, more effectiveness and long-term efficiency. Partnership can also help in identifying and evaluating alternative and emerging technologies in the light of health policy and strategy and their impact on health management and the community. Partnership has important roles in appropriate technology management including the identification and replacement of outdated technology and exploiting existing technology and harnessing technology in order to support quality improvement. This is particularly true in developing innovative and environmentally friendly technology. Another area for partnership is collecting, structuring, managing, using and increasing information and knowledge in support of enhancing policies and strategies in support of quality of care. Such partnership will ensure providing appropriate access, for both internal and external users, to relevant information and knowledge using information and creative thinking as well as assuring and improving information validity, integrity and security.

Partnership can extend within the national context to include bilateral and international agencies to tackle priority national health issues but this is beyond the scope of this chapter.

Experience in several countries in the Eastern Mediterranean Region has shown that in order to ensure the sustainability of quality of care there is

a need to establish committees at different levels of care and define their terms of reference.

One WHO-sponsored community-based project which has been launched in several countries in the Eastern Mediterranean Region is the basic development needs approach. The basic development needs initiative is a community-based and community-oriented health development initiative. Technical supportive teams and intersectoral committees established at all levels of care ensure sustainability and relevance of interventions. Sustainability is also ensured through community representation, income-generating schemes and capacity-building of staff.

Partnership with the community and other sectors has to be through an agreed agenda where roles are identified, accepted and practised; or through a common goal, and all parties strive to achieve it. Partnership can also be achieved through a shared benefit, such as social prestige, moral obligation, wish fulfilment, or visibility and promotion of the partnership. Partnership with the main stakeholder—the community—is a major asset which will benefit quality of care through:

- identifying key organization and community partnership opportunities in line with policy and strategy and the organizational mission
- ensuring cultural compatibility by sharing knowledge with organizations and supporting mutual development
- generating and supporting innovative and creative thinking, working together with community, in order to improve and add value to the user/provider chain
- measuring and managing any adverse effects of the organization's assets on the community and employees (including ergonomics, health and safety).

Partnership can be short-term or long-term depending on the three main areas mentioned above, namely roles, goals and benefits. As in health priorities, change with time it is expected that partners may vary with time. New partners are presently needed in the health arena in many countries of the Eastern Mediterranean Region. For example, the private sector has recently become an important partner in health provision, at a time when resources are scarce and the role of the ministry of health is being redefined.

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Chapter 9

Important areas for quality improvement application

A.F. Al-Assaf, R. Koffman, P. Mosca and D. Pistole

In this chapter several areas of importance are presented. Utilization management, risk management and infection control are just a few of the many areas quality assurance and improvement encompass. Therefore this chapter is subdivided into four sections, each of which is written separately. Section one is devoted to infection control, section two is on risk management while section three is on utilization management. As for section four the author discusses the broader topic of outcomes management and its impact on quality improvement. The current trend in focusing on outcomes to improve quality merits the inclusion of such a topic in this document. Of course these section are intended to introduce the reader to the subjects discussed and are not meant to be comprehensive. Those interested in any or all of the topics presented are encouraged to seek additional information as outlined in the references at the end the chapter.

Infection control

Infection control, which addresses the transmission of disease and how to interrupt that process, easily lends itself to continuous quality improvement activities. The detection of an infectious disease that has been or could be transmitted within a health care facility will automatically lead to both control and prevention activities. When the result is decreased and/or

elimination of transmission, this constitutes the continuous quality improvement process in action. Identification of trends, reporting and acting on these trends constitutes the improvement cycle.

Infectious diseases are the third leading cause of death in the United States (CDC, 2000). Statistics from the World Health Organization reveal that almost one-third of the deaths in 1999 were due to infectious diseases (WHO, 2000). The dangerousness of infectious diseases is compounded by the increase in susceptible patients due to their age, the number of invasive devices used, underlying chronic diseases, and so on.

Who benefits when the transmission of a disease is prevented? Patients, their families, health care workers and their families, and finally the community. Deaths decrease. The cost of providing health care decreases. Patient satisfaction increases. The length of patients' hospitalizations decrease with a multitude of benefits, including the decrease in opportunity for further nosocomial infections. Therefore, resources such as hospital beds can be better used. For employees who stay healthy, absenteeism due to illness is reduced, the hospital is more adequately staffed, and employees are happier.

Infection control has been a concern since Ignaz Philipp Semmelweis observed in 1847 that mortality rate for women whose babies were delivered by nurse midwives (who did not participate in autopsies) was lower than that of those who had their babies delivered by medical students, who worked on cadavers (and did not wash their hands between tasks). After a strict hand-washing policy was implemented, mortality rates dropped from 12% to 3% in a matter of weeks (Nensteil RO et al., 1997). Continuous quality improvement in action!

Infection is characterized as an invasion of tissue by an infectious agent, resulting in signs and symptoms of disease—local heat of the tissue, redness, swelling, fever and pain. This is usually handled with medication, and in some instances with more invasive treatment measures. Conversely, the same agents that cause infection can be present (usually in smaller numbers) without causing illness at all. This is known as colonization. The host has no signs or symptoms of infection, and indeed is not ill. Whether infection or colonization is present, the infectious agent can be transmitted to a susceptible person, who may develop an infection.

In health care facilities, it is important to differentiate infections acquired prior to hospitalization, known as community-acquired infections, from those acquired during hospitalization or another health care interaction. The latter type, known as nosocomial infections, are considered more important for several reasons. First, they are preventable when transmission is understood and interventions are instituted. Secondly, acquiring an illness in a facility where one came to overcome an illness is an insult to the integrity of the health care system. Other significant reasons include the increasing incidence of antibiotic-resistant organisms, which are usually generated in health care facilities. These organisms must be treated with more expensive and less available medications, and often for longer periods of time. In some cases, resistance can be transmitted from one organism to another, as in the case of methicillin-resistant *Staphylococcus aureus* (MRSA), which is treatable with vancomycin. It has been demonstrated *in vitro* that vancomycin-resistant enterococci are capable of transmitting that resistance to strains of *S. aureus*, resulting in organisms with reduced susceptibility to the glycopeptide antibiotics (such as vancomycin), known as glycopeptide intermediate *S. aureus* or GISA. Preventing the transmission of diseases in combination with appropriate use of antibiotics prevents development of resistance.

Of special importance in addressing infection control is the understanding of the infectious agent, patterns of occurrence, likely reservoirs, mode(s) of transmission, incubation period, period of communicability of the disease and susceptibility and resistance of the host.

Any discussion of infection control calls for a brief review of the three basic methods of transmission. Knowledge of the methods of transmission is directly linked to an understanding of preventing transmission. The Centers for Disease Control and Prevention in Atlanta, Georgia (CDC), recommend the use of “standard precautions” (Garner JS et al., 1996)—frequent hand-washing along with the use of barriers such as gloves, gowns and masks—with all patients, regardless of diagnosis. Additional precautions are recommended for specific diseases, which correlate with the means of transmission. Table 9.1 shows a comparison of contact, droplet and airborne transmission.

Table 9.1 Comparison of contact, droplet and airborne transmission

Type of transmission/ isolation	Comment	Examples
Contact	Skin-to-skin contact, known as direct contact, is the most common vehicle of transmission of contaminated body fluids. Indirect contact involves touching inanimate objects that are contaminated with an infectious body fluid. This is the most common transmission and easiest to prevent with good hand-washing and use of gloves in addition to standard precautions.	*Staphylococcus aureus* Scabies Impetigo Ebola virus
Airborne	These organisms are small enough that they waft in currents of air for hours, and can be inhaled by susceptible individuals who then become infected. Transmission is prevented through use of masks, and special "respirator" devices in cases of tuberculosis in addition to standard precautions.	Measles Varicella Tuberculosis
Droplet	These diseases involve larger particle droplets that, when emitted by coughing, singing, etc., may either be directly inhaled or may fall on to a person or object that then becomes an indirect vehicle. Use masks while within 1 metre of infected patients in addition to standard precautions.	Pneumonic plague Influenza Rubella Pertussis *Neisseria meningitidis*

Surveillance

The significance of surveillance is explained by the World Health Organization thus: "the surveillance of a communicable disease is a fundamental activity required for an effective disease prevention and control programme" (CDC, 2000). Surveillance is defined as the "ongoing systematic collection, collation analysis of data and the dissemination of information to those who need to know in order that action may be taken" (CDC, 2000). Put simply, surveillance provides information, which leads to the institution of actions which prevent and control infectious disease.

Surveillance of health care–related infections involves a process beginning with case definition and ending with control of transmission. The steps of surveillance include the following.

A consistent definition of infection

In order to benchmark both internally and externally, this component is possibly the most important part of the process. All parties must agree on the criteria that define an infection. Definition by criteria such as the quantity of organisms detected by a laboratory and signs/symptoms specific to the site of infection (exudate of a wound, auscultation of rales in pneumonia, dysuria, etc.), as well as other criteria such as white blood cell count. A universally accepted criterion must be used if comparisons outside the facility are desired. If not, consistent application of criteria as agreed by the infection control committee may be acceptable for use within a facility. Other considerations include determination of the length of hospital time that must elapse to differentiate the infection as nosocomial versus community-acquired (or "present on admission"), a critical determination.

To present a thorough representation of nosocomial infections, surveillance needs to include any infections occurring post-discharge. Clinic appointments or home health visits are helpful sources of such information. Criteria such as a 30-day window for surgical infections or one year for implantable devices (pacemakers, artificial joints, etc.) must be used consistently in relation to whether the disease was community-acquired or nosocomial.

The National Nosocomial Infection Surveillance System is a database created by the CDC (2000) in order to monitor nosocomial infections in a consistent manner. A representative group of hospitals in the United States regularly reports their nosocomial infection data to the CDC, and reports are published in the medical literature. This is a consistent and established benchmarking source. Other systems are in place in many other countries; however a centralized global system does not exist.

Regular data collection

The data gathered will lay the foundation for the study of the distribution and determinants of disease, the discipline known as epidemiology. The type of infection, its manner of transmission and other data peculiar to that disease will dictate the type of data to be collected. For example, with indwelling catheter-related urinary tract infections, the number of days of catheter use are recorded. Typical data collection will include the date of onset of symptoms, the nature of the symptoms and the organism (if applicable), as well as descriptive data such as the ward, service, or surgical procedure. Analysis of these data result in the discovery of trends which warrant system changes.

Types of surveillance

Concurrent

Concurrent surveillance is regular, ongoing review of patient medical records, which reveals infections as they occur. This is related to the concept of "shoe leather epidemiology", meaning that the best quality data are those collected *in situ*. Advantages include the ability to intervene quickly if indicated, and possibly detecting trends in early stages when control and prevention can take place. Disadvantages include obtaining access to the medical records during the patient's hospitalization, which may be time-consuming. Reviews that are performed in the care setting can be disruptive.

Retrospective

A retrospective review looks back at a certain component of the health care process. Advantages include ease of chart review due to lack of interruptions and having all materials available. Disadvantages include discovering trends after the fact. This can render intervention meaningless, with a possible loss of opportunity to affect patient outcomes.

Total or 100%

All charts on all types of patients are reviewed and reported. Advantages are that all infections and all trends may be detected. This is helpful when a facility has just opened, or is in the infancy of its infection

control programme because a baseline can be established, and problem areas can be detected. Disadvantages include feasibility in only the smallest facilities. Hence, 100% review is rarely performed in acute care facilities.

Targeted or focused

Selected categories are reviewed as determined by internal or external indications. Examples of common focused reviews are implant-related infections (pacemakers, artificial joints, etc.), device-related infections (invasive devices such as intravenous lines or ventilators), specific surgery (caesarean section deliveries or cardiac surgery), and organism-specific infections (multidrug resistance) or any other infection of importance to the facility or community. Advantages include the opportunity to perform an in-depth study of the incidence of infection in the category being studied. Disadvantages include potentially missing infection trends in areas not studied.

After determining the number of nosocomial infections, the number must be put into perspective by representing it as a rate. Once a rate is chosen, that same rate is used to compare time periods within a hospital or to a benchmark outside the facility. The nature of the data being collected determines the appropriate denominator. Four common denominators and applications follow.

Hospital discharges are used as the denominator when total surveillance data are being reported. These must be infections for which every patient is at risk. The rate is derived from the following formula:

$$\frac{\text{Number of nosocomial infections during a specific time}}{\text{Number of patients discharged during the same time}} \times 100$$

For example, suppose 15 cases of nosocomial pneumonia were counted in a month, using the determined nosocomial pneumonia criteria. During the same month, 150 patients were discharged. Thus the prevalence rate of nosocomial pneumonia is:

$$\frac{15 \text{ cases of nosocomial pneumonia}}{150 \text{ patients discharged}} = 0.1 \times 100 = 10\%$$

Patient days may also be used to reflect the above situation when total surveillance is performed. To determine patient days, the sum of the daily hospital census for every day of the identified time period is calculated.

$$\frac{\text{Number of nosocomial infections during a specific time}}{\text{Number of patient days during the same time}} \times 100$$

For example, suppose 15 cases of nosocomial pneumonia were counted in a month. The total patient days for that month was 325 days.

$$\frac{15 \text{ cases of nosocomial pneumonia}}{325 \text{ patient days}} = 0.046 \times 100 = 4.6 \text{ cases per } 100 \text{ patient days.}$$

Number of patients at risk of a certain of infection is used when a focused surveillance is performed. The number of patients who had a particular procedure such as a surgery is commonly used as the denominator. Again the same time period applies to both the numerator and denominator.

$$\frac{\text{Number of nosocomial infections related to a particular surgery}}{\text{Number of surgical procedures performed}} \times 100$$

For example, suppose surgical site infections following coronary artery bypass graph (CABG) surgeries are being studied. In one month, 50 CABG surgeries were performed. Ten of these patients met the criteria established by the CDC for surgical site infection.

$$\frac{10 \text{ infections following CABG surgery during the month}}{50 \text{ CABG surgeries performed during the month}} = 0.2 \times 100 = 20\%$$

or a rate of 20 infections per 100 surgeries related to CABG.

Device days is a variation of the infection rate per patient day. However, this is specific to the number of days all patients were using a certain device such as a catheter. It is expressed as a rate per 1000 device days:

$$\frac{\text{Number of device - associated infections for a site}}{\text{Number of device days}} \times 1000$$

For example, suppose the relationship of indwelling catheters on urinary tract infections is being studied. The number of days of catheter use is calculated for each patient hospitalized during a month. All patients' catheter days are totalled to determine the number of device days.

Patient 1: 10 catheter days; no infections
Patient 2: 6 catheter days; one infection
Patient 3: 11 catheter days; two infections
Patient 4: 12 catheter days; two infections
Patient 5: 15 catheter days; two infections
Total infections = 7
Total device days = 54

So the rate is 7/54 = 0.125 × 1000 = 125 device-related infections per 1000 device days.

The most important component of these rate calculations is the internal and (if applicable) external comparisons. Trends may be detected related to seasons or type of facility, or to situations lending themselves to control and prevention. The reporting and use of this data for improving performance comprises the continuous quality improvement process.

Investigations

Outbreak investigations are performed when an unexpected increase in new infections is noted. The patients identified are investigated to determine a common source of infection, and that source is then addressed. A source may not always be determined, in which case appropriate action

(education, observation, training, etc.) may be generically applied. If an improvement is noted after the actions, a theory can then be postulated as to the cause of the outbreak.

Contact investigations are related to outbreak investigations. When a patient is identified with an infection that is contagious, the period of infectivity is first identified. All persons having contact with that patient during this time are determined, and appropriate actions related to the nature of the infection are taken. For example, when hepatitis A is identified, the patient's contacts within the period of infectivity are identified and offered immune globulin to prevent development of hepatitis A. Education regarding prevention of transmission of hepatitis A is also provided.

Prevention

Hand-washing is the single most important procedure for preventing nosocomial infections. Hands should be washed in running water with soap for at least 10–15 seconds in the following instances:

- after removing gloves (gloves are not infallible, and deteriorate based on length of time worn, activities performed, quality of the glove, etc.; therefore one should always assume that the glove could have developed an unobserved break during use).
- between patients, before leaving each patient's area if possible
- after eating, smoking, applying cosmetics
- after use of lavatory facilities
- after sneezing or coughing, with or without use of a tissue.

Effective disinfection and sterilization procedures should be carried out in accordance with manufacturer's recommendations for all patient care equipment and devices. The nature of the infectious material also dictates the type of process required. Logs of these tasks should be kept for the purpose of maintenance as well as for reference when an investigation is performed.

Immunization programmes for both health care workers, adults and children are an extremely effective method of disease prevention. When the host is not susceptible, the disease cannot be transmitted. Recommended vaccines for health care workers in the United States include hepatitis B, MMR (measles, mumps and rubella), varicella and influenza vaccines.

Vaccines routinely recommended in other countries are related to regional disease prevalence.

"*Stay at home"* may be the best option when certain diseases or symptoms are present in health care workers. This includes diseases as well as exposure to certain diseases. An ill worker places both patients and co-workers at risk by coming to work with a potentially contagious disease. The immune system needs rest to recover from an infectious disease. Allowing time to recover and preventing transmission is the best solution, therefore employees need to know when to stay at home. A wellness programme may also be helpful to educate employees and patients regarding avoidance of transmission as well as general methods to decrease susceptibility, such as a balanced diet, adequate rest and avoidance of risk factors.

Prevention of needlesticks and sharps injuries. With the emergence of HIV and forms of hepatitis without vaccines or effective treatments, the prevention of transmission of disease through bloodborne pathogen exposures in the workplace has become critical. Education of staff regarding proper handling of sharps/needles should be performed at least annually. At least the following guidelines should be followed:

- all needles, scalpels and sharp instruments should be placed after use in a puncture-resistant sharps container
- containers should be located as near as possible to the location where the sharps are used and discarded
- needles should not be bent or broken prior to disposal
- needles should not be recapped except when using the "scoop" (one-handed) method
- all bloodborne pathogen exposures should be reported and managed as recommended.

Beneficial trends to analyse and report in a health care setting

As mentioned, nosocomial infections are the most important infections to track. Trends are useful in determining what activities are most effective in preventing disease. Infection sites as well as organisms should be presented graphically in order to illustrate trends easily. Trends can be compared and possibly correlated with census, employee turnover, seasons, institution of new procedures or equipment, etc. Trends in device-related

infections are helpful and important to track. Central venous catheters, urinary catheters, and ventilators are common sources of infection, and successful improvement opportunities are documented in the literature to address upward trends noted in these areas. For regions using tuberculosis skin testing, trends in employee conversions are important.

Bloodborne pathogen exposures such as needlesticks and body fluid splashes on mucous membranes are critical to analyse. Any trends in the manner of exposure should be addressed immediately. An example occurred in a new facility: A small disposable lancet was used for fingerstick blood sugar testing. It was found that over half of the needlesticks in a six-month period were related to these devices being improperly discarded (although sharps containers were found in all patient rooms). The nurse manager researched options. A disposable device that automatically retracted the sharp point of the lancet and was practically tamper-proof was tested by the nursing staff. Although these devices did not eliminate the need for proper disposal, the device was determined to be safer since the sharp was no longer exposed. The hospital's risk and safety as well as infection control personnel approached the administrator and obtained budget approval to use this product. No further needlesticks of this type occurred.

Vaccination programmes for employees are important preventative actions, and reporting the current status of these programmes is important. When reporting bloodborne pathogen exposures, the vaccination status of the exposed employee should be reported, and this component trended as well.

It is very helpful to use graphs to represent these data. The audience to whom the data are reported should be considered, and the most appropriate graph used. After taking a position at a new facility, a nurse epidemiologist found that a report using basic bar graphs was lost on the receivers of the information. The nurse realized that the audience was not accustomed to looking at graphs. The computer program that created the graphs could also include a table of data, so that function was used to facilitate a transition/learning curve for the audience (who quickly began to appreciate the ease of graphical interpretation!).

The laboratory can provide antibiograms, which indicate resistance patterns of organisms and can be tracked to determine changes in

susceptibility trends. The progression of antimicrobial resistance can be checked and followed. Most resistant organisms are nosocomial, so addressing the reasons for those changes is prudent. Many facilities have begun to monitor antibiotic use and require physicians to provide justification when prescribing antibiotics. Providing the physicians with a ranking of the appropriateness of antibiotic use with regard to the organism can be integrated into this type of improvement activity.

An infection control committee or function

Improvement only occurs when information is communicated to all persons involved in a process, resulting in agreement and consistency. The infection control committee studies reports, analyses and endorses endeavours, and facilitates progress. It lends authority to infection control activities by virtue of its members, which should include an infectious disease physician, a representative from administration, a physician from each specialty (surgery, paediatrics, etc.), the infection control nurse, the employee health nurse, and representatives from nursing departments, pharmacy and respiratory therapy. Others who are helpful but may just attend on an as-needed basis include a dietician, housekeeping representative, risk manager and safety representative. Reports of all disease exposures and outbreaks are included in the committee reports. This committee reports to the quality improvement committee, and recommends chartering of a quality improvement work group when interdisciplinary issues arise.

In conclusion, infection control, like most of medicine, is an art as much as it is a science. Much of the art of infection control lies in the ability to creatively investigate and determine solutions to be tested and incorporated if they are successful. If we believe the old adages, “hindsight is 20–20” and “history repeats itself”, then reporting and trending, if done well, will take us into a better quality of patient care.

Risk management

Types of risk

The first step in understanding risk management is to understand the two basic types of risk. The first type of risk is known as speculative risk. Speculative risk results in the possibility of reward for the acceptance of risk. The second type of risk is known as pure risk. Pure risk involves only the possibility of loss, without any possibility of gain. The speculative risk category contains the four basic business risks known as asset risk, pricing risk, interest rate risk and general management risk. While a health care company may face any and all of these risks, the most likely candidate for concern is the risks associated with pricing. This risk includes the issue that medical costs will exceed the amount of premium collected. The major category of pure risk faced by a health care organization is that of litigation. This situation may occur in any setting or country. Litigation involves only downside financial consequences and no possibility of financial gain for the organization.

A generally accepted method of estimating cash requirements for a health care company is to use a risk-based capital (RBC) formula. An RBC formula takes into account the need for capital based on several areas of risk. Those components of an RBC formula include the following categories: credit risk (the risk that once passed off to a secondary group, cannot be met by the group in question, such as capitation or reinsurance); affiliate risk, which includes the risk that an affiliate company will suffer financial losses, which will change the availability of capital; asset risk, or mark-to-market risk, which includes fluctuations in closely held assets; business risk, which includes operational losses; and finally underwriting risk, which was previously discussed under the issue of pricing risk. Once the liquid assets needed in each of these areas are determined they are added together to arrive at the assets required for the company as a whole. The risk-based capital formula requirements are used by many managed health care companies to determine their capital and surplus requirements.

The following is a general outline summary of a variety of risks faced by the average health care plan.

Member issues

Liability for care rendered

This form of liability exists when the plan is sued under the theory of vicarious liability or ostensible agency. Thus, the plan is felt to be responsible for the actions of it's contracted physicians. By stating clearly in *all* plan materials that all medical decisions are those of the plan physician and not those of the plan as well as clearly identifying in all plan materials, handouts, provider manuals and marketing materials that physicians are independent contractors and not employees is some help in mitigating this risk.

Liability arising from grievances and appeals

This form of liability comes from case law and notes that the plan can be held legally accountable when medically inappropriate decisions result from defective design or implementation of plan cost containment policies.

ERISA

The US Employee Retirement Income Security Act of 1974 notes that plans are liable only for the cost of care "limited", and not for any punitive damage awards. In addition ERISA provides that this federal law cannot be pre-empted by any state action. This ERISA protection has been limited in several jurisdictions in recent years.

Medical director woes

This is that liability that both the plan and the plan medical director can be held liable for decisions construed by the court to be "medical" and not benefit in nature i.e. only based on cost or billing rather than benefit to the patient.

Provider issues

Selection and de-selection

This is the area of credentialing, where the plan may be held liable if it fails to adequately investigate the credentials of a potential contracting provider. The reverse side of that argument holds that by arbitrarily and capriciously acting to not accept a provider in the plan panel, or to deselect a provider the plan can be help liable by the provider.

Employee or independent contractor?

This issue was covered above under ostensible agency; the plan must endeavour to state and restate as often as practical that its contracting physicians are independent contractors and *not* agents of or employees of the plan.

Liability of compensation arrangements

If a compensation arrangement can be construed to encourage under-use or foster the withholding of medically needed care for physician financial gain, some courts have held that the health care plan is liable for such arrangements and found both actual and punitive damages against such plans.

Regulator issues

Guarantees of quality

Any guarantee, warranty or implication of the same by a health care plan can place that plan at litigation risk.

Physician incentives and risk sharing

See the paragraph on compensation arrangements above; there are some published regulations concerning the percentage of compensation which is deemed “legal” by certain government segments.

Regulatory compliance

All too often in recent years in various states within the United States legislation concerning the coverage of a specific disease or disease state has been passed. These legislation results in increased plan liability as well as increased cost associated with regulatory compliance.

Things to know and do

The following are suggestions for those persons in the health care plan who will be responsible for certain plan operations, which will be by necessity related to plan risk management operations.

For the chief operations officer or risk manager

- Know your plan and programme activities in detail.
- Design mechanisms for appeals, which provide for due process.
- After you have made your rules-follow them.
- Avoid saying “never” and “always”.
- Keeping the above in mind, “never” guarantee, assure or otherwise promise high and lofty ideals. Although this may sound good, it is nearly always indefensible.

For the medical director

- Seek out processes which predict potential problems before being faced with those same problems in the courts.
- Anticipate liability scenarios based upon a variety of published risks, historically in place.
- Review all denials for requested services twice, obtain consultations as needed, and check the current literature if in doubt.
- Involve plan physicians in as many decision-making roles as possible.
- Litigation is costly in terms of time, money and potentially image.

Compliance programmes

In recent years compliance issues have become paramount for any health care plan. The following is the very briefest of compliance plan basics.

- Conduct an audit of your claims.

- Conduct a legal audit of *all* of your contracts, especially if you are a medical director.
- Referral arrangements, marketing practices: be certain these do *not* violate current in country guidelines.
- Develop written standards.
- Appoint a compliance officer.
- Train your staff on how to follow your procedures.
- Conduct ongoing monitoring of your operations.
- Provide a confidential hot-line for receiving complaints and logging provider specific practice variations.
- Establish disciplinary actions for violations and stick to them.
- Modify policies and procedures as needed.

Utilization management

Managing the utilization of care is of utmost importance in any managed health care organization, and one cannot discuss the subject of managed health care without also recognizing the role of utilization review or management. The provision of medical services consumes more of the premium dollars in a health maintenance organization (HMO) in the US, or health care organization, than any other activity in which it engages. Therefore, close attention to this function can provide an organization with a successful financial return, while still providing appropriate and quality care for its members (of course this presupposes a for-profit setup).

The term “utilization review” is often used interchangeably with “utilization management,” and “utilization improvement”. Whichever term is used by any particular organization, the function of this process can be divided into three distinct activities: prospective review, concurrent review and retrospective review. The objective of these activities is to control cost, while also reviewing for appropriateness of care, medical necessity and quality of care. Historically, most utilization review programmes have focused predominantly on cost, but increasingly the focus is shifting to appropriateness. These activities are usually provided by registered nurses, under the direction of a licensed physician, using recognized scientific

review criteria. In selected circumstances, all or some of the criteria may be locally developed and approved by the health care organization.

Types of review

Prospective review

Prospective review refers to an assessment of a service before it is delivered. It is most often seen in the form of a pre-admission certification for a planned hospital admission. Using appropriate criteria, the reviewer assesses the requested service in order to ensure that it is medically necessary, and delivered at the most clinically appropriate and cost-effective level. Also at this time, some organizations will match the requested service to the benefits to which the patient is entitled. It is at this point of entry into the health care system that significant attention must be paid to the appropriateness of the level of care requested. Inpatient admissions are costly and often unnecessary, especially now that there are many other options available to deliver the same quality of services at significant savings. These options include, but are not limited to outpatient surgery, home infusion services, home health nursing and outpatient rehabilitation services (which may be applicable in the private sector in the East Mediterranean Region). If the information provided to the review nurse satisfies the criteria for admission, a certification or "pre-cert" number is issued to the hospital, along with an assigned length of stay.

For example, if a patient is scheduled to have an elective procedure, the attending physician places a call to the utilization review department. At this point, a nurse obtains information regarding the proposed procedure and any clinical information relevant to the case. If the clinical information provided satisfies the required criteria for that procedure, authorization is granted. If information is lacking, the nurse may elect to place the request on hold until the relevant information is obtained. The nurse may also elect to refer the case to an organization's medical director for review. The medical director may approve or deny the request.

In the event that an admission is not planned, such as an emergency admission, the admission is reviewed retrospectively for appropriateness and

is referred to as an admission certification. The process is the same as pre-certification, except that the admission has already taken place.

Concurrent review

Concurrent review refers to gathering information about a patient and making an assessment of the continuation of services for an inpatient stay that has already been certified by a health care organization. This should be performed by licensed medical professionals who understand disease processes, estimation of length of stay and discharge planning. The concurrent review nurse receives information from a designated person within the hospital facility regarding the patient's condition and the level of services that are currently provided. Recognized criteria and organizational guidelines are applied to the case and reviewed before approval of a continuation of stay is granted. Often, managed care organizations elect to have concurrent review performed on-site at the facility by licensed nurses. This gives the health care organization the advantage of actually reviewing the patient's entire chart and actively participating in discharge planning. This consists of communication between the review nurse, the patient and family, the hospital nurses and the attending physician to discuss the care plan, the expected outcomes and possible alternatives to continued hospitalization. On-site review also makes it possible for the review nurse to identify obstacles early in the case and consult with the health plan's medical director. This is sometimes negatively perceived by the physician as interference by the health care organization in the clinical treatment of the patient. However, if it is approached sensitively by addressing both the quality and medical necessity of the care provided, and not just the financial interests of the health plan, both the physician and the patient will be more receptive to alternatives to an inpatient stay and the service that the plan provides to its members will be more personalized.

It is during the concurrent review process that the utilization review nurse identifies the need for the possible involvement of the case manager and refers the case in a timely manner. A case manager is most often a registered nurse who acts as a patient advocate or facilitator of care for complex and expensive medical cases. While many cases referred to the case manager are recognized at the time of admission, based on diagnostic red

flags or trigger lists, others can be identified during the concurrent review process, particularly if an unusually extended length of stay is anticipated. This is not to say that all lengthy inpatient admissions are candidates for case management. However, this presents an excellent opportunity for the case manager, in consultation with the health organization's medical director, to explore more creative avenues in having the patient discharged to an alternative care setting, or even home. Health organizations often give case managers the authority to trade out designated benefits in order to provide the most cost-effective and appropriate level of care for the patient. Case management functions will be further addressed later in this chapter.

Retrospective review

The third level of utilization review is retrospective review. This level of review takes place after the service has been rendered to the patient. The medical records of the case are requested and reviewed for medical necessity and appropriateness. Treatment patterns are also monitored and trended for procedures that are expensive or tend to be overused. This information can be used to provide feedback to the physician, and also when initiating re-credentialing activities for the involved providers.

Most managed care plans also provide second opinion review, as part of their utilization management plan. It can be mandatory for selected procedures, but most often it is used selectively by the health care organization. A second opinion review can be required for both surgical and complex medical cases. The case is reviewed by an independent specialist who is usually board-certified by their college (certified as a specialist in a certain medical field) or is known to have demonstrated expertise in the area that is involved. In surgical cases, the independent physician must have specialized knowledge of the procedure in question. This is most often relevant when the medical director for the health care organization is in disagreement about the plan of treatment with the attending physician. The goal of a second opinion is to reduce unnecessary or inappropriate treatment for the patient. This not only benefits the patient from a clinical standpoint, but helps control expenses.

Case management

Case management is an integral part of the utilization management programme used by managed care plans, especially health maintenance organizations. Case management began to evolve in the 1970s from a coordination of care effort from discharge planners in the hospital setting. In 1990, an international professional society of case managers was founded, the Case Management Society of America (CMSA). CMSA defines case management as a "collaborative process which assesses, plans, implements, coordinates monitors and evaluates options and services to meet an individual's health needs through communication and available resources to promote quality, cost-effective outcomes" (CMSA, 2003).

Case management cases are often complex, catastrophic cases, identified during the pre-admission review or concurrent review process, and referred to the case manager in order to begin the process of coordination of medical and social needs of the patient. Each health care organization develops their own criteria for what is deemed to be catastrophic. This can be measured by length of stay or billed charges, or both. For example, criteria for a catastrophic case could be defined as any hospital admission that results in a length of stay greater than 10 days, or billed charges of $30 000 or more (of course charges may not be applicable outside the US). Diagnoses that are almost always considered catastrophic include HIV, haemophilia, multi-system trauma and referral for organ transplant. The medical professionals, social workers, community agencies and the family are all a part of this coordination effort. The case management process can significantly reduce the average length of stay while still providing the patient with necessary services from a quality provider and ensuring the continuity of medically necessary care.

Decisions made regarding the plan of treatment include the physician, the patient and family, and the hospital utilization/discharge nurse, the case manager and the health care organization's medical director. This requires frequent communication between the involved parties if the health plan is to be successful in managing cost-effective use of limited resources.

Although the past trend of identifying case management cases was similar to episodic crisis management, today's trend is to identify individuals at risk of complex medical conditions. This identification process can be

accomplished with health risk assessments, which are health surveys developed by the health plan or professional survey vendors, or with retrospective utilization reports, which identify their members with certain chronic diseases. The case manager is then involved, with the assistance of disease management programmes, to help reduce the occurrence of an acute exacerbation that may result in a hospitalization.

Measurements

It is common for health care organizations to measure and trend the use of health care services. This allows an organization to apply the measurement to the budget and more accurately accrue for expenses. Most commonly, this is measured in the number of bed days per 1000 members per year and the number of admissions per 1000 members per year. Each organization must decide for itself what they need to measure and define that measurement. A bed day might be counted only for a hospital admission resulting in over 24 hours. However, another organization may include skilled nursing facility admissions and rehabilitation facility admissions as bed days. Most organizations will not count outpatient surgery as a bed day, but will report that under a separate heading. They will also track average length of stay by facility. However, when looking at this, one must remember that different facilities may handle patients of very different acuity levels.

A typical method of reporting inpatient use is to identify admissions by bed type: medical, surgical, maternity, skilled nursing/rehabilitation or psychiatric. Also, it is helpful to identify the catastrophic cases within these groups. All of this information can be tracked, on a daily basis, by the utilization review nurses.

Outcomes management and quality improvement applications

The end result of a process is an outcome. Since the main customer in health care is the patient, outcomes must be targeted at improving the medical status of the patient (Lohr, 1987). It is for this reason that outcome research is important in developing paradigms of efficient clinical processes and patterns that will improve a patient’s medical status. Examples of

commonly used outcomes are patient satisfaction, patient mortality, unscheduled return to the operating room or readmission within 72 hours of discharge for the same medical condition. These are obvious direct care outcomes, but other outcomes should also be considered like behavioural, physiological and psychosocial outcomes. These may include rehabilitation potential, functional status and quality of life (Jennings, 1991). Although outcomes are the end result, they must be analysed as part of the total picture—the patients and their environment. Thus we should not use one outcome measure as the basis on which to judge the quality of care. Outcome measures should be part of a system of studying structure, process and outcome.

Paul Ellwood (1988) introduced outcomes management as a concept. He described outcome management as follows. “In medicine ... our unifying goal is the good of the patient. To support this philosophy, I propose that we adopt a technology for collaborative action ... let’s label this technology ‘outcomes management’.” Outcomes management is the process of collecting, analysing, evaluating, and disseminating the results of medical processes or procedures to improve the results of health care through collaborative efforts (Al-Assaf, 1993, 1994). The guidelines and protocols for these procedures are agreed on by appropriate and widely acceptable bodies. Outcomes management can only be achieved through a collaborative effort by all players of the health care system-patients, purchasers, providers, payers, and regulators. This effort requires total integration of the health care system, both vertically and horizontally (Geehr, 1992).

Ellwood (1988) introduced four benefits of outcomes management.

- Practitioners will be provided with widely accepted guidelines and standards through outcomes management.
- Outcomes management will provide the skills and tools necessary to measure the status and well-being of the patient, both clinically and functionally.
- With outcomes management large databases will be available and accessible by providers and researchers in order to provide information on clinical and outcome data.

- There will be wide dissemination of information, customized as appropriate for decision-makers, and updated and modified to reflect changes in technologies, philosophies, and expectations.

Outcomes measurement involves collecting, analysing and disseminating a formidable amount of data. It is almost inconceivable that the intelligent use of collected data to generate useful and meaningful information can be accomplished without the use of computers. Automated information systems are invaluable in performing this task. Information systems will improve availability and access of meaningful patient information that are readily useful. Furthermore, technology can provide physicians and clinical decision-makers with the ability to trend care outcomes and compare them with current and historical results from similar institutions, with the ultimate goal of improving the quality of care.

According to Ellwood (1992), computers will allow "doctors to see their patients in some larger epidemiological context". Outcomes management will obtain feedback (and lots of it) from patients about their medical care. This includes the efficiency of the treatment, the impact of the diagnosis on the prognosis and the patient's ability to function normally—all directly from the perspective of the patient.

Most continuous quality improvement paradigms are process-oriented and are either prospective or more commonly retrospective problem-prevention paradigms or a combination of both. Outcomes management, therefore, proves useful in determining the best outcome for a given process. Managing outcomes will have an impact on how processes are structured, conducted, and improved and provide the feedback necessary to develop appropriate, effective, and efficient guidelines. Outcomes management is highly dependent on continuous quality improvement in achieving such an objective in a manner that is equally acceptable to all key players in the health care system.

Accordingly the objectives of outcomes management are mainly to improve medical outcomes through the improvement of health care processes. The following is a list of specific objectives of outcome management:

- to achieve a better control of the end results of medical intervention

- to identify and prevent variant behaviour
- to facilitate informed decision-making processes
- to study the courses of proactive pattern variations and suggest the most appropriate ones
- to engage in patient-focused research in order to improve care outcomes
- to collect and disseminate information that will meet the concerns of each decision-maker most efficiently and effectively through an integrated system
- to involve as many appropriate players as possible in the formulation of patient care guidelines.

Considerations in outcomes measurements

According to an article that appeared in *QRC advisor* (1992) health care organizations find it difficult to focus on outcome for two reasons. One is that an outcome must be considered globally; that is, it involves *all* the results of patient episodes and nothing less. However, one should recognize that results are reached through a series of processes performed by a system structured to carry them out. Therefore, an outcome is dependent on structure and process, especially when an adverse result occurs. All the elements that caused or resulted in such an outcome should be examined, and ways to improve them should be considered and implemented.

Another reason (or myth) cited for difficulty of focusing on outcome is that health care organizations consider outcome to be either physician focused or, on the opposite extreme, dependent on too many individuals. Of course, both statements are debatable. Although physicians are vital to patient outcomes, they are not the only contributors. Other health care professionals contribute to producing an outcome. Certain outcomes, however, occur without (or with limited) physician participation (for example, patient comfort and diet during a hospital stay, difficulty with visitor parking facilities or satisfaction ratings). Further, an outcome is traceable to its original source, and the processes leading to it can be identified, studied and improved. The focus should *not* be on individuals, but rather on processes (usually a manageable number) that can be improved. Therefore an outcome is not dependent on too many individuals.

Emphasis should not be on outcomes alone as they have limitations. According to Boyce (1996), there are several weaknesses with outcome measures. Outcomes can tell you how well it worked but not why or what caused it. Also, waiting for outcomes to happen before making a decision on improvement is counterproductive, and at the same time consumers usually care about service, which is more related to structure and process.

Outcomes measurements obviously are useful to the extent that they have been developed accurately and thoughtfully. The objective must be defined and the appropriate questions asked when developing an outcome measure. To assess measurement, one main question should be the focus: what does it really measure? Does it measure volume, process, resources and input, or does it measure outcome? To qualify as an outcome measure, the answer to these questions must consistently be *outcome*. It is also important to keep in mind that we need to know *who* will be using it, *when* will it be carried out, and *how* the data be collected. Of course, the ultimate test of any system of measurement is its validity, reliability and usefulness, which is clearly beyond the scope of this section. Further readings are found in Al-Assaf and Schmele (1993).

Managing or measuring outcomes?

As previously mentioned the main objectives of outcomes management are to improve the health status of the main health care customer, the patient. Therefore, the desired outcome of a patient encounter should be improved health status of that patient, relative to his or her health status before the encounter. The degree of this desired improvement is dependent on a patient's needs, expectations and perceptions and the efforts of the health care team to meet them. This is the difference between *measuring* the outcome of a process and *managing* total patient outcomes. The process of outcomes management looks at the patient episode as a process in a continuum. Outcomes management views outcomes in terms of the total process, measuring the extent to which a system accomplished its objective of improving patient care, all the way from health promotion and patient education to clinical intervention, follow-up and patient rehabilitation.

Therefore the steps for outcome management are:

- data collection and analysis regarding health care structure, process and outcome with emphasis on outcome
- evaluation of information through an integrated approach—the total care episode within the context of the larger database of other similar care episodes
- development of practice guidelines through a collaborative interdisciplinary approach
- dissemination of information to practitioners coupled with education on how to use and what to do with this information
- continue monitoring and improving outcomes through data collection and analysis, and so on.

Several considerations need to be taken into account when measuring and managing outcomes. According to Meltzer (1992), there are at least five considerations.

- The skills and knowledge of the individual providers should be considered, as methods of providing care vary, and therefore so should the outcomes of their services.
- Consider different perspectives in defining and measuring outcomes. Individual expectations of desired outcomes may be substandard based on the expectations of another individual. Also, desired outcomes from the perspective of the patient surely differ from those of providers, administrators and payers. Also keep in mind the question of who will watch the watchers?
- Use severity of illness measures to compare like with like.
- Consider the quality and comprehensiveness of the statistical analyses.
- The following and similar questions need to be considered. Where should the line be drawn? Who will draw it? Will a decision by a payer to stop performing a diagnostic test that has 30% success rate be justified from the patient's perspective? What about a 35% success rate test or even 5% success rate? Would rationing of health care impact outcomes management efforts to improve the quality of total patient care?

Report cards are a recent trend. Consumers, purchasers, and regulators alike are asking how to make the right decision in choosing a "quality" provider. Therefore, several large employers such as Xerox, GTE and AT&T in the US are developing their own report cards on providers based primarily on outcome measures (Mahar, 1996; Magnusson and Hammonds, 1996). This trend is also being followed by the largest health maintenance organization accrediting body in the US, the National Committee on Quality Assurance, with its Quality Compass project. This, when completed, will rank each health maintenance organization according to outcome measures National Committee for Quality Assurance is developing (NCQA, 1996). Of course this project is in addition to HEDIS (Health Plan Employee Data and Information Set), the current outcome measurement system used by the National Committee for Quality Assurance as part of the accreditation process. It is also noted that Centers for Medicare and Medicaid Services' Medicare managed care product will also be relying on HEDIS or a similar outcome-based data to rate the quality of Medicare providers.

Outcomes management and quality improvement

The main objective of using outcome measures is to improve the quality of care delivered by a health care organization to its patients. There is a focus on the total care episode in outcome management. A specific outcome is dependent on all the structures and processes involved in its development. To achieve improvement, all factors, barriers and strengths of the *system* should be reviewed, evaluated and improved. Outcome measures are important tools for directing our attention to the reasons why certain outcomes occur. They should direct our efforts to finding ways to address these challenges efficiently to achieve the desired outcome. This is the difference between *measuring* and *managing* outcomes. Managing outcomes is what total quality is all about—managing the total system to improve the quality of care rendered to the patient.

According to Bohr and Bader (1991) and Batalden et al. (1994), the Deming cycle of "plan–do–check–act" is congruent with the processes of developing clinical guidelines (an aspect of outcomes management). Appropriate care criteria are developed (plan) by asking Who? Does what? When? With what? Implemented (do)? What are we learning accordingly?

Monitored (check)? What have we learned? Did original outcomes improve, and were they tested and retested (check)? Those that prove to be successful are used and those that do not work are discarded (act).

Epstein (1991) presented the same argument. The principles of the two philosophies are very similar. In outcomes management, criteria that are successful in improving the outcome of care are developed and monitored. Variations from these criteria are minimized and further eliminated through continuous assessment. All of these activities are related to total quality and continues quality improvement. The fundamental principle of total quality is to eliminate variation, and this is what outcome management attempts to do: recognize *good* outcomes, study them, and eliminate variations in the process that may lead to undesired outcomes.

Geehr (1992) also agrees with this. He also suggests that quality improvement of structures and processes depends on feedback from outcome measurements. He goes on to suggest that this can be done prospectively, with the use of practice guidelines and expert systems, and retrospectively, through assessment of trends and outcomes of clinical practice patterns.

Therefore, this brings this discussion to the basic fundamentals of quality improvement, which is customer-focused continuous process improvement through an efficient system of feedback and evaluation. Thus clearly outcome management is a process that is made up of five major processes. Applying this concept to quality improvement each of these processes will be considered as an opportunity for improvement. And as improvements of each process are carried out, a system of feedback and evaluation is established to monitor the impact of this improvement so that further improvement is carried out, and so on.

In conclusion, outcomes management is obviously still undergoing refinement. However, outcome-based assessment of the quality of care is gaining broader acceptance, and health professionals are becoming more aware of it. Outcomes management is based on a collective effort to assess performances and to develop appropriate criteria for care in an effort to achieve a desirable outcome. An outcome should be based on feedback from patients, providers and third parties and take into consideration the process of continuous improvement of the system of care.

Health care decisions are and will increasingly be data-driven. According to Geehr (1992), the future of outcomes management will involve physician privileging and credentialing, critical pathways (Coffey et al., 1992), practice guidelines, and peer review processes, among many other processes. However, with vast amounts of data available, the use of computer technology will increase rapidly. Health care professionals will be forced to use these technologies to compare their outcomes with those of their peers.

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Annex 1

Quality assurance and improvement in Egypt

M.A.M.S. Farag

Quality assurance and improvement system

In terms of quality, clinical effectiveness and consumer satisfaction, the quality of many health facilities in Egypt in the past few years has been poor. Since most of the insufficient funds were spent on maintenance, the quality of health care programmes suffered negatively. Physician training and continuing education need continuous improvement, especially as it relates to clinical practice guidelines. There is a shortage of skilled nurses. The Ministry of Health and Population's primary care clinics are often poorly equipped. There is a lack of supplies and drugs, and the clinics are staffed by undermotivated and often poorly trained health practitioners. Additionally, nosocomial infection rates are high.

More than 50% of deaths in emergency cases are due to improper case management. The quality of laboratory tests is very poor. There is improper use of drugs, and until recently there was a lack of a standardized drug formulary for use at health care facilities although this was rectified.

The government of Egypt has articulated, as its long-term goal, the achievement of universal coverage of basic but quality health services for all its citizens. The Ministry of Health and Population, which is responsible for the health of the Egyptian people started the Egyptian health sector reform programme in order to achieve a number of goals:

- improve primary care and preventive services
- ensure universal access to a defined set of basic health care services through a comprehensive social insurance system
- improve the quality of services and the skills of medical professionals.

Therefore a quality improvement programme was urgently needed. A Quality Improvement Directorate was established in July 1997 and was adequately staffed as an integral part of the health sector reform strategy in Egypt. One of the first steps that was implemented after its initiation in 1997 was the development of a quality improvement strategy for the Ministry of Health and Population. This strategy outlined the major goals and objectives of the quality improvement programme and specified the key functions, roles and responsibilities of the Directorate.

The objectives of the quality improvement programme are:

- to strengthen the role of the Ministry of Health and Population in the regulation of health care facilities
- to manage the quality improvement programme
- to strengthen the ability of health care facilities and practitioners to assess and improve performance.

The Quality Improvement Directorate fits into the organizational chart of the Ministry of Health and Population under the Sector for Ministerial Health Affairs and directly under the Central Administration for Monitoring and Evaluation.

The main functions of the Quality Improvement Directorate programme are:

- development of a facility accreditation programme
- development of a monitoring system
- development of national health care standards and protocols
- research and surveys
- training.

The Quality Improvement Directorate is represented in nine governorates; of which three belonging to the health sector reform programme and other six to the respective governorates). In each of the nine

governorates there is a quality improvement coordinator and two assistant coordinators, one for primary health care and the other for curative care. Each district also has a quality improvement coordinator and two assistants. Also, each facility has a quality improvement committee/council.

The quality improvement strategy was used as a framework for developing the annual implementation plan for 1998 and 1999. In this way, the Quality Improvement Directorate started working with various Ministry of Health and Population programmes and departments in order to identify opportunities for collaboration and shape the overall strategy.

In the plan, the Quality Improvement Directorate has developed a basic benefit package for primary health care and implemented it in the pilot governorates. The basic benefit package consists of four components: child health, maternal health, adult health, emergency, and minor surgery. The quality improvement programme facilitated the selection of priorities for improvement, which included:

- most common health problems and needed services included in the basic benefit package
- focusing on facilities that are part of the reform or belong to other already existing projects
- building the skills of providers to support services under the basic benefit package.

The second step was the development of the protocols and practice guidelines for the four components of the basic benefit package.

The Quality Improvement Directorate worked with Ministry of Health and Population programmes and departments in order to compile existing guidelines and refine them and develop new ones in areas where they did not exist. This was followed by the dissemination of those clinical guidelines to pilot facilities in the first quarter of 1999 using existing training programmes. Some of the dissemination activities included consensus-building workshops with expert physicians from the Ministry of Health and Population, the universities and medical associations, among others. Other activities related to this initiative included focus groups to discuss the content of the clinical guidelines and coordination with Ministry of Health and Population in order to ensure training of providers on these guidelines.

One of the most important activities of Quality Improvement Directorate's training programme was quality assurance/quality improvement awareness for pilot facility staff. This training activity led to the formation of quality improvement committees which in turn immediately started the implementation of quality in their facilities.

A quality assurance/quality improvement manual for the work of the team was prepared in a very simple way in order to help the pilot facilities with their improvement programmes. Periodic field visits from the Quality Improvement Directorate were regularly carried out. Weekly and monthly reports were regularly made.

As for monitoring and performance measurements, the Quality Improvement Directorate is developing a list of indicators that will help assess the performance of pilot facilities and the quality of services. The Quality Improvement Directorate reached a consensus on the most important indicators as first step. The objectives of these indicators are to:

- measure the quality of performance of providers and their ability to provide appropriate care
- involve providers in self-assessment and improvement
- analyse trends in performance over a time period
- compare performance across facilities and districts.

The Quality Improvement Directorate facilitated the coordination with stakeholders and developed a plan for implementation of these activities through the Ministry of Health and Population.

Standards development

The Quality Improvement Directorate team produced a list of standards for measuring and monitoring performance, especially in primary health care, covering:

- patient rights
- patient care
- emergency care
- management of support services
- management of facilities

- human resources
- management of information
- quality improvement
- infection control.

The standards were developed in both English and Arabic and were immediately communicated to pilot and other primary health care facilities in certain governorates. Communication was provided by members of the Quality Improvement Directorate. Then the Quality Improvement Directorate team trained other staff (quality improvement coordinators) in order to assist the Quality Improvement Directorate team in the dissemination of standards. All the standards were presented to all staff working in the facility. The Quality Improvement Directorate team concentrated on what are called key dimensions. Each standard has its definition, explanation, verification and scoring guidelines for a future and potential accreditation system. A plan was then developed for the implementation of each standard according to the following:

- steps for implementation
- person(s) responsible
- timetable
- resources needed
- training needs.

Meanwhile members from the Quality Improvement Directorate team made special visits to the facilities for data collection in order to measure compliance to standards in the facility. Analysing the collected data and implementing a reporting mechanism were essential for improvement. These standards were applied either at newly functioning facilities in pilot areas, for the recruitment of new staff or to already functioning primary health care facilities.

The implementation action plans were very useful either in the process of evaluation and monitoring or in solving problems at different levels.

Accreditation programme

The development of the health facility accreditation programme is one of the most important benchmarks for health reform and quality improvement programme. As mentioned above, one of the main objectives of the quality improvement programme was to strengthen the role of the Ministry of Health and Population in monitoring the health care system in general and the quality of care in particular. For this scope, the Ministry of Health and Population established an accreditation and licensing programme in order to facilitate the development of standards and specifications for care, which health providers must meet. The accreditation programme not only sets optimal standards of care but also develops mechanisms for ensuring compliance with standards. Compliance with these standards, once enforced nationally, will ensure the health and safety of patients. Facility-based accreditation and licensing programmes will ensure appropriate use of services.

The Quality Improvement Directorate, which is a general directorate, administers four technical functions/departments:

- quality improvement training and capacity building
- research and special studies
- monitoring and evaluation
- accreditation and licensing.

A director-general is in charge of all administrative, accounting and financial functions of the department.

The department of accreditation and licensing has three main responsibilities:

- to establish and continuously refine a licensing and relicensing programme for Ministry of Health And Population facilities
- to develop the skills of a group of experts so that they can become surveyors of public health facilities
- to act as a regulatory body within the Ministry of Health and Population.

The Quality Improvement Directorate is responsible for setting standards related to quality of care, monitoring compliance of public facilities with standards and developing a mechanism to enforce compliance with procedures. Prior to this new programme, licensing in Egypt was the joint responsibility of the Ministry of Health and Population and the professional syndicates (physicians, nurses, dentists and pharmacists). However, there was no system of relicensing to ensure continued competency. Accreditation of health facilities was not performed.

The new licensing/relicensing programme categorizes and rates providers according to level and quality of services provided. The programme will also enrol providers in a quality improvement programme designed to help them reach optimal levels of care. The accreditation process will take place through a series of confidential onsite visits to government health facilities. A group of experts will administer a survey delineating key requirements, specifications, and standards. This group will then assess each facility's performance against the survey criteria and determine the accreditation status of the facility.

The experts, a diverse group representing government health providers, teaching institutions and medical associations, will work in teams. The assessment will involve considerable consultation between the facilities and the team of experts. It will be a collaborative process of improvement and not merely "policing" the facilities.

Although punitive action may be taken in cases where there is failure to comply with standards, the process will not end with the onsite assessment. A very promising feature of the accreditation authority is that it will continue to assist facilities in improving their quality of care. The accreditation programme will work to ensure that facilities which cannot meet the standards will participate in a nationally sanctioned "improvement programme" that will enable them to bring themselves gradually into compliance with the national standards.

If external monitoring shows no improvement, and a facility continues to deliver suboptimal care, the Quality Improvement Directorate will become more actively involved. Such intervention might include consultation and/or technical assistance in planning quality assurance

activities or training, imposition of corrective actions, or creating new intervention strategies.

The process and method of application include:

- testing and refinement of the preliminary accreditation standards drafted in 1998
- testing the accreditation procedures and systems drafted in 1998
- selecting and training an accreditation survey team
- testing the accreditation standards and process in selected pilot facilities with the survey team.

The Quality Improvement Directorate, as a pilot, started focusing on five facilities for testing the accreditation programme.

The levels of application are concerned with all types of services. But in the first phase we focused on family health units and centres. But some specialized hospitals are also willing to be involved in the programme, especially after participating in quality awareness workshops run by the Quality Improvement Directorate.

The activities and tasks regarding the accreditation process were scheduled in a timetable:

- review standards
- create the assessment tool (final list of standards in Arabic plus explanation) as well as the scoring guidelines.
- consensus-building activities (presentations in Ministry of Health and Population/field visits/meeting with projects and directorates/informal discussions)
- pilot testing
- assessment process (who/how/certification body/draft/dialogue/consensus)
- summarize/analyse findings
- certification manual.

Steps to long-term quality improvement

In order to ensure the design of a workable accreditation and licensing programme, the Quality Improvement Directorate is currently exploring the following issues:

- determining the feasibility of establishing such programmes in Egypt
- identifying mechanisms for setting standards
- developing a long-term training plan to build Ministry of Health and Population capacity
- evaluating methods to enforce corrective measures
- identifying mechanisms to assist facilities with limited resources in improving quality and meeting standards of care.

Once the programme is fully implemented, the government will monitor provider compliance with Ministry of Health and Population standards at the governorate level. Local government entities will then transmit the results to the central government. Because the governorates will play a major role in monitoring and regulating the health care system, special efforts will be needed to build capabilities for licensing and quality improvement at the governorate level.

Achievements and challenges

In implementation of the above-mentioned initiatives and programmes the Quality Improvement Directorate faces a number of challenges.

- Balancing long-term objectives (such as the accreditation of providers and facilities), which will take years, with immediate improvement needs. The Quality Improvement Directorate must be able to handle all those quality problems urgently needing improvement.
- Building local skills to develop and manage the quality improvement programme.
- Improving documentation and quality of data, which did not exist in Egypt until the creation of an information system. Such systems must be built on accurate data. There is a focus on improving the patient file and the documentation of the filing system. Also, developing a software program for data collection, analysis and reporting.

The role of the Quality Improvement Directorate is to coordinate all of the quality improvement efforts with all existing directorates within the Ministry of Health and Population and the governorates. It is also to provide technical assistance to raise, control and continuously improve the quality of health care in government health facilities.

Annex 2

Mechanism for setting standards and measuring performance in primary health care in Cyprus

A. Polynikis and A. Agrotou

Background

Primary health care in Cyprus is provided by nearly all the registered physicians in Cyprus. In the government sector, primary health care is organized on a comprehensive basis and is provided not only at the level of the general physician but also by the whole primary health care team (health visitors, environmental health officers, public health doctors, school health doctors and others). In the private sector, all the practising doctors provide primary health care services.

There is an oversupply of doctors in Cyprus, and almost all of them provide general practitioner services. Primary health care services are characterized at present by an emphasis on cure rather than prevention, and a patient often seeks opinions from more than one doctor in relation to the same episode of illness. There is significant underuse of most rural health centres and a duplication of services due to the lack of a unified health care system. There is no continuity of health care for patients and an appropriate medical records system is lacking.

The government of Cyprus has developed proposals for the implementation of a national health insurance scheme. One of the key points of these proposals is to strengthen primary care in Cyprus. Many health care systems are based on the concept of the family doctor. This notion is based on the principle that each member of the population should be registered with a doctor, who is usually the first point of contact when a patient requires medical care. In many countries it is the GP who acts as the gateway to specialist services. In Cyprus, this issue is still under discussion. As the recommendations for the implementation of a national health insurance scheme include the introduction of a system of general practice. Every member of the population becomes registered with a family doctor/general practitioner.

Under the proposed system for health care reform, the remuneration of general practitioners will be based on capitation and built-in incentives in order to insure the achievement of improvements in the quality of care. The Ministry of Health took the opportunity of ascertaining general practitioners' opinions on this very sensitive issue.

A key aspect of medical practice is the ability of medical practitioners to audit their professional work. A process of review and audit of the quality and standards of family doctors must be an integral part of the reform of the health system in Cyprus. Experience in other countries has shown that the most successful audit programmes are those in which the doctors develop the desire to audit their own practice. An understanding and subsequent shaping of the attitudes of family doctors towards continuing medical education, clinical audit and quality assurance must be a high priority from the earliest stages of the implementation of the reform.

The government of Cyprus is currently funding a general practitioner training programme leading to a postgraduate diploma in general practice. The main aim of this programme is to develop knowledge and skills among practising general practitioners in Cyprus and to help doctors develop a critical approach to general practice by closely examining their own work, learning from the work of others and developing an objective analysis to published work i.e. using evidence-based practice parameters.

The Cyprus Ministry of Health gives first priority to upgrading the already existing services for primary health care, in view of the introduction

of a national health insurance scheme in which general practitioners play the central role in health care delivery. A mechanism of setting standards for measuring performance in primary health care is essential for high quality, cost-effective, accountable and evidence-based services.

This mechanism is already being implemented, and huge progress has been made, considering the original lack of the background necessities for implementing such mechanism:

- absence of a culture of accountability at all levels in the delivery of health care in Cyprus
- no requirement for continuing medical education for medical practitioners
- absence of a suitable database that contains information on the activities of medical practitioners and an information system throughout the health care delivery system.

Over the past few years the Ministry of Health has undertaken studies assessing the already existing government services and making proposals for their reorganization.

Introduction of information technology is advanced in administrative applications at hospital level. In clinical applications and especially as far as general practitioners are concerned, this is still at the level of developing the strategic plan. A part of this plan is the development of a paper-free hospital. In the process of introducing information technology, 15 general practitioners have been trained in the use of information systems for quality assurance of health services.

A training programme for general practitioners was undertaken by the University of Surrey and more than 250 general practitioners from both private and public sectors have completed the course successfully. A module on audit and development of guidelines for specific diseases was included in the course. Additionally, a programme of continuing education for the general practitioners from both the private and public sectors has been undertaken by the National & Kapodistrian University of Athens.

Another activity was the completion of visits by WHO consultant John Nearchos, whose assignments were medical audit and health services review for Cyprus (1997) and training of general practitioners in Cyprus in

quality assurance/medical audit (1999). These were a valuable tool in the implementation of the mechanism of setting standards for measuring performance in primary health care.

Development of standards

During the audit/development of guidelines for specific diseases module of the Surrey University course for general practitioners, protocols for the management of hypertension, diabetes and asthma were set by the general practitioners themselves during a group work exercise done as a part of the module. These protocols followed the process of clinical governance.

After the first 150 general practitioners completed the audit module, an international conference on medical audit/disease management was held in Larnaca in October 1998. Specialists in the three fields from Cyprus and UK, as well as Cypriot general practitioners, attended the conference. The protocols of the Cypriot general practitioners were presented, the international standards (from the US, UK and Greece) were introduced by the consultant, and through a consensus of all the general practitioners who were present, standards for the three diseases were introduced. These standards were circulated among all the 150 general practitioners who attended the course.

Since then, a medical audit system has been established on an ongoing basis, built on what has been achieved already, incorporating both private and public sectors. Protocols linked to international standards continue to be developed. The general practitioners are going to set standards for both clinical and other aspects of primary health care; they are going to have the initial support from UK experts and the encouragement of the Ministry of Health. Later, once this process is established it will function independently, having links with specialists, other professionals and international groups.

The international environment

Over the past 10 years there has been a major social revolution based on the universal availability of information. This applies equally to health care as elsewhere, and it is well recognized that information can be used in several different ways to support the changes in and growing complexity of health care delivery. However, the real impact on health care of the

information society lies in its influence on the behaviour of the public. One of the great paradoxes of modern institutional health care provision is that patients have up to now had only limited access to information about their own state of health. In an increasingly consumer-orientated world, individuals now demand the right to make an informed choice based on a balanced review of all the alternatives and their likely outcomes. It is this taking back of power into the hands of the health care consumer—the patient or customer—that will drive many of the new information technology developments in health care over the next 10 years.

Access to health care information has lagged behind other areas for reasons of complexity and outdated attitudes to professional confidentiality. This situation is set to change and will result in growing pressure from society for big improvements in the quality and efficiency of health care delivery. Information technology clearly has a pivotal role in achieving this.

Clinicians, consultants and general practitioners are already reporting that patients are now questioning much more the opinions of professionals and are seeking alternative sources of information. At the same time, societies are demanding a more open approach to the measurement of quality in health care delivery. As a result, medical professionals are faced with progressive reduction in the unfettered clinical freedom which they have traditionally enjoyed. This manifests itself in demands for change in several different areas:

- greater attention to systematic ongoing training
- more adherence to defined clinical standards
- increasing emphasis on teamwork and information sharing.

This has led to a demand for increased quantity and quality of information at the point of care. Until now information technology has been used extensively in health care for administrative and financial processing activities. However, clinical information needed to support decisions related to the key questions of quality and effectiveness is far from adequate. As a result, the emphasis in health care today is to capture information at the point of delivery of care as the basis for improving both clinical and managerial performance.

Training of general practitioners in Cyprus in quality assurance/medical audit

To assess progress since the 1997 primary health care developments in Cyprus, a three-day workshop was conducted in June 1999, attended by senior officials of the Ministry of Health, including the permanent secretary and officials from the finance and planning departments and the auditor-general's office.

The workshop identified constraints in the implementation of quality assurance for primary care. The use of information systems was seen as a key to the training of general practitioners and implementation of quality assurance. The workshop discovered that little progress had been made since 1997 on the introduction of information technology to general practitioners. A number of factors needed to be addressed to overcome the existing constraints. The workshop outlined recommendations and priorities to overcome the constraints and facilitate the implementation of quality assurance in primary care.

The factors identified by the workshop were:

- the lack of basic clinical and administrative records
- creation of a culture of proper record-keeping at all levels
- need for an audit of records of medical events, such as operation notes and prescribing records
- a review to assess the quality of operation notes, other hospital events and hospital discharge summaries
- a comparison of the records from each hospital.

The workshop produced recommendations and priorities needed to improve the training of general practitioners and the implementation of quality assurance in Cyprus. These were:

- establish a Ministry of Health policy for quality assurance and medical audit
- establish a mechanism for implementation of quality assurance
- train administrative and clinical personnel in quality assurance and medical audit
- delegate authority to local levels
- establish an independent body responsible for quality assurance in ministry of health

- review available data and make recommendations to improve data
- include both public and private sectors
- prohibit hospitals from training doctors unless quality assurance and medical audit is undertaken
- introduce incentives for quality assurance and medical audit
- establish standards and protocols for medical audit as part of quality assurance
- seek support from auditor-general and Ministry of Finance
- establish links with international quality assurance and medical audit units.

The workshop nominated participants to prepare a paper outlining these recommendations and providing an action plan for implementation.

Group work at the workshop produced the following recommendations.

- Recommendations for the introduction of medical audit-health services review at the strategic level of the Ministry of Health:
  - provide a national vision
  - establish a national scale
  - unify the health systems—public and private
  - establish a steering committee with clear terms of reference
  - reorganize the Ministry of Health
  - procure external expert help
  - establish a legal framework for quality assurance
  - critical path evaluation
  - design the system (action plan and timeframe)
  - establish an information system
  - evaluate the present computerized system.
- Recommendations for the introduction of medical audit and health services review at the operational level:
  - provide technical support for an information system
  - implement a computerized system of record-keeping
  - provide training before implementation and continuing education
  - introduce strategies to modify behaviour, using information systems

– develop and implement audit processes, evaluate existing practices, develop protocols and criteria for all areas, set standards, collect information for performance measurement (feedback) in order to promote continuous improvement.

The general training programme for general practitioners has made considerable progress since 1997. More than 250 general practitioners have gained a postgraduate certificate, diploma or masters degree in general practice. The training course provides 10 training modules, including audit and development guidelines for specific diseases and epidemiology, prevention and health promotion strategies.

The lack of progress in the introduction of information systems in both clinical and administrative applications considerably hampers the enthusiasm of Cypriot general practitioners to adopt new tools to assist to better care for their patients. This lack of progress prevents the Ministry of Health from capitalizing on the high educational level and commitment to quality care delivery of those general practitioners undergoing general training.

Training in the use of information systems for quality assurance of health services was undertaken with a group of 15 general practitioners over a period of two weeks. The training used the computer resources of the University of Cyprus in one-to-one training. This was limited to resources available on the internet, including access to biomedical databases and population health data sources, and the demonstration of clinical software. Clinical and administrative software has been introduced in a limited and inconsistent manner in some hospitals. Unfortunately this software was not available for training purposes.

The lack of adoption of a diagnostic coding system is a major deficiency in collecting clinical data for quality assurance and population health management. Software for this purpose is available but has not been implemented and was not available for training purposes.

As part of the training programme (in 1999), with a view to facilitating the implementation of information systems for the health sector, the group of general practitioners was given the following assignment: prepare an options paper for the introduction of quality assurance in the primary health care system of Cyprus.

The paper gives sound recommendations in relation to education in quality assurance for health professionals and policy-makers, the adoption and local adaptation of international protocols and standards of care, and the introduction of a unified national information system. Suggested timeframes are given for the implementation of these recommendations.

The first recommendation of the WHO consultant in 1997 outlined the need for an appropriate management structure for the Ministry of Health in order to strategically manage the introduction of the regulatory processes and associated information management.

It appears that insufficient progress in the implementation of quality assurance can be largely attributed to the absence of specific resources in the Ministry of Health devoted to the management of quality assurance. The importance of quality assurance and its specialized nature need to be recognized at the highest levels of administration. It also needs to be recognized that the proposed national health insurance scheme will not be able to be managed without the integration of quality assurance throughout the health system.

It has now become critical for Cyprus to establish quality assurance mechanisms in its health system. This is essential independently of the national health insurance scheme proposal to provide the capacity to develop health policy and manage the provision of health services in a nationally consistent manner. Furthermore, the establishment of good health policy and the delivery of high quality health services are not possible without effective information systems. Controlling the use of increasingly costly medical technology and pharmaceutical products is not possible without effective information systems. The wasteful use of public funds in the inefficient and inappropriate use of health services and the lack of any reliable measures to establish and monitor accountability at all levels of the health sector should be of concern to the auditor-general.

The participation of a senior official from the office of the auditor-general in the June 1999 workshop provided considerable insight in addressing the above factors. Subsequently, a presentation on the impact of medical audit and health services review on the delivery of quality health care in Cyprus was delivered to the auditor-general and her senior officers in July 1999.

The auditor-general, having considered the current situation in medical services, where it is evident that no sufficient quality assurance system exists, decided to undertake a report describing the weaknesses of the current system and suggesting measures for initiating the implementation of quality assurance procedures. The auditor-general considered this task as vital not only for providing better health care and cost savings but also for a more efficient and effective operation of the proposed new health system.

Conclusion

The training of general practitioners in quality assurance and medical audit has been hampered by lack of suitable policy from the Ministry of Health and infrastructure support from clinical software and information systems. However, participants gained experience in accessing databases using the internet. Some already had experience in this area. Most of the value of the training was achieved through the highly interactive group work in the preparation of the options paper for the introduction of quality assurance into the primary health care system of Cyprus. In this process, the participants were able to apply knowledge of quality assurance and medical audit gained though the general training programme. Most important, the participants have contributed in a significant way to the introduction of quality assurance into the primary health care system of Cyprus. It is critical that the quality assurance processes are designed to meet the needs of the primary care doctors and to ensure they are practical, meaningful and acceptable to all stakeholders. Training of participants has demonstrated that a highly developed information system is essential to the delivery of quality assurance.

The need to establish quality assurance mechanisms in the health system is now well documented. This need is independent of the national health insurance scheme proposal but would be essential to the administration of the scheme. Cyprus must develop a sound health policy and manage the provision of high quality health services in a nationally consistent manner if it is to cope with the pressure of demand of costly new health services. This is not possible without effective information systems to:

- enable health professionals to make good clinical decisions and undertake continuing professional development and education

- assist administrators to properly manage their available resources and monitor performance of the their areas of responsibility
- ensure that the government can be confident that public funds allocated to health services are accountable and deliver the best value to the community.

Recommendations

The Ministry of Health should establish a planning research and information unit immediately. In addition to planning and research responsibilities this unit will have the specific responsibility of introducing and managing quality assurance in the health services delivered in Cyprus. Suitably experienced and knowledgeable personnel will staff it with a support infrastructure to enable the establishment of effective information management, data collection, data analysis, quality assurance and performance assessment systems. The unit will be responsible for implementing the action plan and recommendations of the Platres workshop, the recommendations of the general practitioner training group and any measures suggested by the auditor-general when her report on quality assurance procedures is tabled. The planning research and information unit will be established and operated in consultation and ongoing close collaboration with the information department of the Ministry of Finance and the office of the auditor-general.

Annex 3

Application of a training programme in quality assurance in Saudi Arabia

T. Khoja and M. Basulaiman

Background

A quality assurance programme is now under way in Saudi Arabia. The country adopted and implemented a primary health care programme in 1984, shortly after the Alma-Ata Declaration on primary health care. The programme, which is run by the Ministry of Health, covers the whole country. Primary health care is provided to the community through more than 17 000 health centres distributed equally in both urban and rural areas. An in-depth review of the primary health care programme in the country was conducted by a joint committee representing the World Health Organization, Saudi universities and the Ministry of Health. The review revealed that there was sufficiently high coverage of the population (98%) by the eight elements of primary health care (maternal and child health, immunization, family planning, acute respiratory illness, school health, etc.) in all regions of the country.

The study concluded that although access was no longer a problem, the quality of health care services needed to be improved. The need to ensure the quality of primary health care services was justified due to the fact that some of the health care indices were not at the desired level as prescribed by

the Ministry of Health. The issue of quality in primary health care was first introduced by WHO after an interregional meeting held in Shanghai in October 1990. The recommendations of this meeting encouraged member countries to review their health programmes more critically and advised that a mechanism should be introduced to improve them. Consequently, a quality assurance programme was proposed for Saudi Arabia, and a scientific committee for quality assurance in primary health care was constituted. The programme comprised five stages: development of a manual, training of trainers, training of health teams at health centre level, implementation and evaluation.

The manual included standards and indicators for 11 health centre activities. The WHO Regional Office for the Eastern Mediterranean recognized the manual as the first of its kind in the field of quality assurance. All primary health care supervisors, about 250, were exposed to training workshops for a period of six days each.

Conceptualization and consolidation of quality assurance in the Ministry of Health

The idea of a quality assurance programme began after the contribution of the Saudi Ministry of Health to a WHO interregional meeting on assurance of quality in primary health care, which was held in Shanghai, China, in October 1990.

A proposal for a quality assurance programme in primary health care was prepared by the General Directorate of Health Centres in March 1991.

The Ministry of Health took overall responsibility for the quality assurance programme. A scientific committee for quality assurance was formed in May 1991. The Director-General of Health Centres was appointed as chairman of the committee, which included a group of consultants and resource persons from the Ministry of Health, health services of the national guard, the general presidency of girls' education and the armed forces, in addition to representatives from King Saud University College of Medicine. The staff from the Ministry of Health are concerned with primary health care planning, supervision and follow-up. The scientific background, as well as

the experience of the committee members, is diverse, which enriches its abilities. The committee's duties include:

- selection of primary health care activities that will be covered by the quality assurance programme
- preparation of standards, checklists, rating scales and indicators for the selected primary health care activities
- coordination with WHO and the United Nations Children's Fund (UNICEF), which support the programme.

The first workshop on the quality assurance programme was held in Riyadh, in October 1991. Scientific papers prepared by the committee members, as well as the results of the first workshop, were circulated to primary health care experts in different regions of the country in November 1991, seeking critical review and practical comments. A second workshop on the quality assurance programme was held in Mecca in February 1992. A national symposium on quality assurance in primary health care, was held in Riyadh in March 1992. Thereafter, training of trainers started in the regions (250 candidates).

The general objectives of quality assurance in primary health care in Saudi Arabia

- To improve and upgrade the performance of primary health care workers.
- To promote the delivery of quality services that satisfies the aspirations as well as the expectations of the community and the primary health care workers themselves.
- To reduce the overloading of secondary and tertiary health care facilities with minor ailments that could be dealt with at primary health care centres.
- To provide quality and cost-effective health care services based on equity and social justice.
- To reduce morbidity and mortality rates and promote the health status of the Saudi community.

The specific objectives of quality assurance in primary health care in Saudi Arabia

- Setting standards for the delivery of quality primary health care activities (services) that include the eight primary health care components and other components deemed necessary.
- Setting standards for better performance of primary health care workers.
- Defining sensitive instruments for assessing the performance of primary health care workers—the process of delivery of primary health care activities.
- Selecting sensitive and valid indicators to continuously monitor and evaluate, as well as to supervise the progress and outcome of primary health care services and their impact on the health of the community.
- Including all of the above in the processes of overall health planning, programming (and reprogramming when necessary), monitoring and evaluating primary health care activities.

A practical example developed in Saudi Arabia to disseminate quality assurance

Training of trainers

The training committee comprises the national scientific committee members, as well as technical members of the General Directorate of Health Centres. About 250 trainers were specifically prepared for the second stage of the programme during 1992–93. They were all of the assistant directors for primary health care (19 regions) and all of the primary health care supervisors in the 19 regions. Eight workshops were held. Each workshop was designed for 25–30 trainees. Training materials included the quality assurance in primary health care manual, a synopsis of indicators, the quality indicators form and the health centres' registers and files.

Training methodology

It is a good idea to brief the participants about the subject, objectives and methodology of a workshop sufficiently time in advance. The same

applies to the availability of the training materials or documents. In Saudi Arabia, the participants showed a preference for Arabic during the workshop.

In adult education and training, the recommended method of training is both-ways (dual) communication rather than one-way lecturing. Pre-testing prior to the commencement of the workshop should be encouraged as it forms a basis on which one can build on further conclusions at the end of the workshop. The primary activity of the quality assurance project is to provide training workshops that fulfil the objectives of the project:

- awareness of the importance of quality in the health service delivery system
- quality assurance basic skills based on modern scientific techniques
- team-building skills
- setting standards
- customer satisfaction
- data analysis and quality-improvement tools
- leadership and coaching skills
- training of trainers.

Executive leadership training in quality management

> Total quality management will be drawn from the top of health care organizations, or it will not arrive at all. In moving health care to a new level of performance, we are talking about nothing less than a transformation of the organizations we care about-a transformation planned and managed by leaders.
>
> Berwick 1990

A two-day programme was designed for senior officials in the Saudi Ministry of Health who will be actively involved in the smooth and successful implementation of quality management in Saudi Arabia. This programme highlighted the fundamental concepts, tools and techniques in quality management. It also provided opportunities for participants to develop the foundation of a quality management plan at a national level. Small group exercises, discussions and case studies/examples were used to provide the best opportunities for group and individual learning.

In this programme, participants learned about, explored and discussed:

- the principles of quality management
- leaders' roles and responsibilities
- characteristics of high performance organization
- the importance of mission, vision and values in quality management
- the skills needed to analyse and improve quality
- the foundation of a quality management plan.

This programme was beneficial to senior Ministry of Health officials, regional directors, project counterparts at the regional level, Ministry of Health task force members, administrators and quality management committee directors from primary health care pilot health units (attendance was limited).

Training of trainees

Trainees included:

- doctors
- nurses
- health inspectors
- pharmacists and assistant pharmacists
- technicians (laboratory and X-ray)
- social workers
- managers.

Table A3.1. Targets for training category (Ministry of Health POSS programme, 1997)

Category	Target trainers	No. of training courses
Doctors	3 187	219
Nurses	7 176	412
Health inspectors	1 397	86
Pharmacists	1 296	87
Managers and others	4 081	163
Total	**17 137**	**967**

To achieve the ambitious objectives set (see Table A3.1), the country's regions were divided into three categories according to the number of health centres per region:

- small regions (fewer than 50 health centres), where training of trainees should be accomplished within one year
- intermediate regions (50 to fewer than 100 health centres), where 1.5 years were allocated for accomplishing the training objective
- large regions (100 health centres and over), where we believed that two years would be enough to achieve the objective.

However, shortly after the commencement of this stage, it was realized that this time frame was too ambitious. The quality assurance training faced many difficulties. There were shortages in human resources. This affected the trainers as well as the trainees because there were not enough staff to cover those being trained. There were shortages of material resources necessary for training purposes. All regions were committed to other training programmes (such as maternal and child health training and essential primary health care training for newly appointed staff), thus, their training schedules were already full.

For these reasons, among others, the time frame was slightly stretched intentionally to avoid possible failure by sticking to it.

Monitoring and evaluation of training at regional level

Three methods were employed for monitoring and evaluation of trainees' training in the regions.

The national coordinator of the programme and one or two members of the scientific committee in all regions attended the first training course as observers.

No region was allowed to start training unsupervised. The technique of SWOT analysis (strengths, weaknesses, opportunities and threats) was employed to point out the strengths, weaknesses, opportunities and threats. These were discussed with the health authorities and technical staff concerned.

A comprehensive report was prepared at the end of this and presented to the higher authorities in the Ministry of Health.

Reporting system

A specially designed report format is used. A quarterly report is required from all regions to be sent to the General Directorate of Primary Health Care and revised by critical reading in order to give feedback to the regions (Table A3.2).

The quarterly report had a standardized format so as to allow comparison between regions, and narratives in the report were kept to a minimum.

The report was designed in such a way that the main sections would require absolute numerical data. The first part of the data represents the denominator, which is approximately constant in all reports (the target indicator for achievement), whereas the second part represents the numerator (achievements to date), which is cumulative.

Table A3.2. Classification of regions according to the total scored in the evaluation of the first quality assurance training course, Saudi Arabia, 1993–94 (MOH, 1997).

	Points given to regions according to					
Region	**Leader's support**	**Training site and facilities**	**Trainer's perform-ance**	**Trainees' perform-ance**	**Training skills**	**Total points**
Taif	2	2	2	2	2	10
Baha	3	3	3	3	3	15
Medina	3	3	3	3	3	15
Tabouk	3	3	3	3	3	15
Sharkia	2	2	2	2	3	11
Hasa	2	3	3	3	2	13
Hafr Al Batin	3	3	3	3	3	15
Assir	3	3	3	3	3	15
Najran	3	3	3	3	3	15
Jezan	2	2	3	1	1	9

Key: 3 = good, 2 = average, 1 = below average, 0 = none.

The report is also flexible in the sense that it allowed regions to comment on their training problems and obstacles, as well as suggesting realistic solutions to these problems.

Field visits to the regional training sites

The training included not only the central training sites (in each region's capital) but also other peripheral training centres. Field visits were made to these sites in order to ensure the quality of training, support training activities at regional primary health care level, identify training problems and managerial bottlenecks on the spot, and find solutions.

Applied application: programme of supportive supervision (POSS)

Description of the programme

This programme started in 1995 in the primary health care directorate at the Ministry of Health in Saudi Arabia to strengthen the implementation of quality assurance activities within primary health care centres in the country.

Aim

- To ensure the quality of primary health care activities at the health centre level in the 19 regions of the Saudi Arabia through supportive supervisory field visits.
- To strengthen the concept of district health system and process of decentralization of monitoring of quality and promote self-reliance.

Target

- Primary health care activities in the regions where the health centres are considered the primary sampling unit.
- Regional primary health care supervisors.

Executive board

- Members of the technical committee of the POSS chaired by the Director-General of Health Centres.

Objectives

- Strengthening the relations between the central level (Ministry of Health) and the intermediate and peripheral levels.
- Field training of regional primary health care supervisors on the implementation of the quality evaluation form.
- Monitoring and evaluation of primary health care activities at the beginning of implementation of the quality assurance programme.
- Promoting and strengthening the concepts of supervision as a tool for improving health services.
- Monitoring training activities in different programmes of primary health care networks.
- Using systematic follow-up of training and continued education of supervisors and workers.
- Assessing the practical implementation of different programmes at health centres by using quality assurance indicators.
- Identifying potential areas needing improvement by problem-solving and solution development.
- Evaluating the outcome of those programmes.
- Identifying areas of strength and weakness.
- Exchanging lessons learnt between different directorates through mutual field visits.
- Supplying the health authorities in the regions by appropriate feedback following each visit. The feedback is summarized in the form of points of strengths and weaknesses supported with relevant recommendations.

POSS plan of action

The technical committee of POSS is divided into three teams. Each team consists of three persons and is required to visit about six regions.

Depending on resources, one region is to be visited per week, i.e. four regions per month. All regions should be visited at least twice a year.

Each supervisory visit should include the following.

- Short meeting with the region's top management (director-general/director and his assistant for primary health care) to explain aims and objectives of the POSS.

- Meeting with the primary health care supervisors of the region. This meeting includes defining three health centres (two urban and one rural) that will be visited by POSS team and the regions' supervisors.
- A quality evaluation form is completed for each health centre in collaboration and with full participation of the regions' supervisors.
- Final meeting with the assistant director for primary health care and the regions' supervisors to:
  - analysis of the results of the field visits
  - formulation of appropriate recommendations
- The POSS team submits a report to the POSS chairman, the Director-General of Health Centres, who sends it, with comments and recommendations, to the higher authorities in the Ministry of Health.
- The visited region is supplied with a feedback report.

The use of indicators in monitoring and evaluation of a training programme

Objectives

- Emphasizing the concepts of indicators as a tool for monitoring and evaluation.
- Field training of primary health care supervisors on indicator use.
- Orientation of primary health care supervisors on the common methods of data organization, analysis and, most important, interpretation.
- Enhancing the morale of supervisors in promoting work satisfaction.

Accomplishments of the system

A retrospective study was conducted by the general directorate of primary health care at the Ministry of Health in 1997 in order to examine the impact of the programme of supportive supervision. Five regions were selected as a systematic random sample. The study compared some of the POSS health indicators before the initiation of the programme and by the end of the second phase of it. Although some of the progress achieved cannot be attributed solely to the POSS, there was a dramatic improvement in most of the health service indicators reflecting a very significant

achievement and positive impact of the programme. However, there were some differences among the regions in the extent of improvement observed. Some of the health service indicators did not show a similar degree of improvement as the others. This reflects the fact that there is still an opportunity for further support and improvement for these services. Shortage of some of the supplies and resources was one of the main reasons for this difference in achievement. The impact of the programme of supportive supervision was also reflected by the increasing demands of all the health regions to increase the frequency of the programme visits and to increase the length of these visits to attain the maximum benefit from the programme.

POSS in the national programme of control of diarrhoeal diseases (CDD)

Methodology

Preparing for the visit

- Study the CDD programme's activities in the region before the visit.
- Contact the authorities in regional health affairs in adequate time through letter and phone/fax.
- Explain the objectives of the visit to the regional health authorities.
- Get agreement of the authorities on the objectives and the programme of the visit and its timing.

Contents of the visit

- Visit three or four health centres, rural and urban, with regional authorities and supervisors.
- Use quality indicators (feeding, use of oral rehydration salts, use of intravenous feeding, drug use, hospital admissions, type and duration of diarrhoea).
- Measure the indicators using monthly annual case management reports and family files, in addition to observations.
- Discussion with the health staff the positive and the negative findings.
- Write up the findings in the supervisory record as reference points for future visits (Tables A3.3–A3.5).

Specific objectives for the CDD POSS programme

- To measure the extent of the practical implementation in regions by using indicators.
- To measure the outcome of implementing the extent of the planned target achievement.
- To provide regions with feedback, including weak and strong points of performance.
- To make all procedures uniform in health centres in relation to assessment, treatment and reporting.

Table A3.3. The impact of POSS on the pattern of infant feeding in Quriat region (MOH-POSS, 1997)

Feeding by age	Before POSS	After POSS
Breastfeeding (<6 months)	56.97%	57.49%
Breastfeeding (7–12 months)	33.93%	45.49%
Supplementary feeding	88.93%	99.00%

Table A3.4.The impact of POSS on the type and duration of diarrhoea in Quriat region

Type of diarrhoea	Before POSS	After POSS
Diarrhoea (> 14 days)	1.25%	0.56%
Bloody diarrhoea	1.18%	1.02%
Severe dehydration	0.33%	0.21%

Table A3.5. The impact of POSS on the treatment of diarrhoea in Quriat region

Type of diarrhoea	Before POSS	After POSS
ORS use	98.70%	99.14%
IV use	1.14%	0.74%
Antibiotic	10.48%	8.47%
Antidiarrhoeal	125.00%	0.22%
Hospital admission	4.19%	3.61%

Positive aspects of POSS in the CDD programme

- Aroused interest and interaction.
- Improved communication and coordination.
- Assessed structure and training needs.
- Emphasized role of supervisors.
- Emphasized use of manuals.
- Identified weaknesses of information system.
- Collaboration between the central departments of the Ministry of Health with the peripheral regions.

Recommendations

- Establish a continuing medical education programme with the involvement of educational institutions.
- Integrate hospital and health centre services.
- Energize supportive supervision through quality assurance.
- Procure training needs.
- Train more trainers as necessary.
- Revise and update manuals.
- Improve referrals and feedback systems.
- Improve health information system
- Consider redistribution of health human resources.
- Incorporate the programme in the health plan 1995–2000.
- Evaluate the impact of the programme on health and well-being of mothers and children.

Further steps forward

- Monitoring and evaluation of the quality of care.
- Development and use of indicators, health policy and socio-economic indicators, coverage and health status indicators.
- Strengthening the programme of supportive supervision
- Development of national leaders of quality assurance.

Quality is a direct outcome of the primary health care principles of equity, accessibility, cost-effectiveness, sustainability and partnership with the community. Therefore, quality assurance and improvement in primary health care continues to top the agenda for most countries of the world, including those in the WHO Eastern Mediterranean Region. This manual describes the concept and applications of quality in primary health care settings in a simple and user-friendly format. In addition to explaining various quality management models and techniques, the manual presents case studies that address the problems regularly faced by health care providers. The manual will assist in identifying and selecting opportunities for improvement, and in acting on them to achieve better health outcomes.

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