

An Exploratory Study on Quality Improvement and Effective Management Among Hospital Industry in Puducherry Region

* Viswanathan .S - MohamedMarzooth .I - Merlin .A

ABSTRACT

The purpose of quality management in hospitals is to establish a system that measures and manages patient in a way that provides the optimal care for all patients. This study empirically explores the relationship between hospital quality management and service quality performance in Puducherry region. The objectives of this quality standard are 1) to provide an implementation mechanism that will facilitate the reliable administration of prophylactic antimicrobial agents to patients undergoing operative procedures in which such a practice is judged to be beneficial and 2) to provide a guideline that will help local hospital committees formulate policies and set up mechanisms for their implementation. The research reveals strong relationships between hospital service quality performance and the analysis of service process and workforce development. The data also indicate that medical technology investment alone does not contribute to a significant improvement in hospital service quality. It is the analysis of the health service process information collected using advanced technology that considerably contributes to health service quality improvement. In addition, the study shows that organizational cooperation, workforce development, medical technology investment, and information/process analysis mediate the relationship between health service quality and top management leadership.

Introduction

In many ways, healthcare management is a “hidden” career. When we think of a hospital or a clinic, we tend to think of physicians, nurses, and other caregivers. The myriad of people who work in the organizations that support health services delivery organizations, like insurance and managed care companies and government policy-making and regulatory agencies, are even more invisible and are not considered as “health services.” However, they play very important roles in making health services available and accessible.

Think of medical dramas on television or in the movies. Rarely do you see a health services executive among the characters, and when you do, it is many times in a rather unfaltering light, such as the

* Department of Management Studies, IFET College of Engineering, Tamil Nadu, India
E-mail:bims mohamed@gmail.com, rajeguru14@gmail.com

greedy executive who is more concerned about money than patients. The news media also tend to focus on hands-on caregivers in health services organizations or to present executives in these organizations negatively. This book will help you see the range of work options that are available to health services executives. It will also help you to see that careers in this field take many different directions and many different paths. Most of all, we hope that this research will help you see the incredibly important role that healthcare executives play in health services delivery in Pondicherry. While these executives may often be hidden and work behind the scenes, they have a tremendous effect on the availability, accessibility and quality of health services in our communities. They help to provide an environment in which physicians, nurses, and other caregivers can practice effectively and efficiently, and they help provide safe, comfortable, and compassionate places for people to receive health services when needed. Although they are concerned about the business side of healthcare, ultimately they are concerned about the health of people in the communities they serve. There is not one term for the field we are talking about or the people who practice it—healthcare management, health services administration, and other variants can be used interchangeably. People who practice in this field may be called health services executives, healthcare administrators, health services managers, or other similar names. This can be confusing if you are new to healthcare, but it will become second nature. Another source of confusion is the fact that administrators may be identified by the specific type of organization in which they work, for example, as a hospital executive or nursing home administrator. However, the meaning of such terms is usually clear. The development of healthcare management as a career field has largely followed the development of medical science and the growth of hospitals in the United States. Until the early part of the twentieth century, very little could actually be done in hospitals to improve the health of patients. People who had enough money received nursing care in their homes when they were ill or dying or having a child. Those who became hospital patients were generally poor and without family or friends to care for them. However, with the advent of antiseptics and anesthesia, the development of modern surgery, and the discovery of antibiotics in the late 1800s and early 1900s, hospitals became places that could offer cures and relieve suffering. Between 1875 and 1925, the number of hospitals in the United States grew from just over 170 to about 7,000, and the number of hospital beds increased from 35,000 to 860,000 (Rosner 1989). Early hospital administrators were called “superintendents” and typically had little specific training for their jobs—many were nurses who had taken on administrative responsibilities. Over half of the superintendents who belonged to the American Hospital Association in 1916 were graduate nurses, and the first formal hospital administration and nursing school administration educational program, in health economics, was established for nurses at Columbia Teachers College in New York in 1900 (Stevens 1999). Other hospital superintendents were physicians, laypersons, and Catholic sisters. The first degree-granting program in hospital administration was established at Marquette University in Wisconsin. The original idea for this program came from Father Moulinier, a force behind the Catholic Hospital Association and a member of the 1922 Rockefeller Commission on the Training of Hospital Executives. In 1927, two students, both women religious, received their degrees, but by 1928, the program, with no other graduates, had failed (Neuhauser 1983).

In 1929, Michael Davis published his book *Hospital Administration, A Career: The Need for Trained Executives for a Billion Dollar Business, and How They May Be Trained*, proposing a two-year

graduate degree curriculum in hospital administration. The first year of this curriculum was centered on coursework in accounting, statistics, management, economics and the social sciences, and the history of hospitals and the health professions, with limited practical observation. The second year was mostly spent in practical work with some coursework in business policy, public health, and labor relations. Following on Davis' proposal for graduate training in hospital administration, the Committee on the Costs of Medical Care in October 1932 stated: Hospitals and clinics are not only medical institutions; they are also social and business enterprises, sometimes very large ones. It is important, therefore, that they be directed by administrators who are trained for their responsibilities and can understand and integrate the various professional, economic, and social factors involved. Definite opportunities should be provided in universities or in institutes of hospital administration connected with universities, for the theoretical and practical training of such administrators. The administration of hospitals and medical centers should be developed as a career which will attract high-grade students. However, before the finding of the first graduate program in hospital administration, a group of practicing administrators came together in 1933 form the American College of Hospital Administrators (now the American College of Healthcare Executives), the first professional association for hospital administrators. And, while both clinically trained and lay administrators could affiliate with the new College, the emphasis was clearly on the lay administrator. Among the 106 charter fellows of the College, 16 were women and 32 were physicians (Stevens 1999). The professional status of the field was furthered in 1934 when the University of Chicago established the first graduate program in hospital administration, naming Michael Davis as its head. The new program was largely based on the model that Davis had proposed a few years earlier. This development program should also be implemented in Pondicherry to promote the health care sector to perform effectivity.

The Indian health care system

There are several stakeholders participating in Indian health care system. These stakeholders will be further described below, but first a short summary of them: The financing and production of health care are decentralized to publicly elected county councils. They decide how many resources should be available to health care and the number, type, and size of hospitals and primary health care centres. Private stakeholders, such as trade unions, patient associations, the mass media, or companies may try to influence these decisions.

Hospital directors and heads of hospital divisions decide how to organize the hospitals to provide good quality care, within budgets, while at the same time meeting the requirements of laws and regulations. Department heads and staff, as well as private stakeholders, may engage in this process. Heads of hospital departments will need to decide on staffing, routines, and day-to-day priorities. Staffs and quality coordinators must priorities among available quality improvement efforts, as must centrally place hospital quality committees or directors. County councils, managers, and staffs are bound by laws and regulations decided by Indian parliament and the National Board of Health and Welfare. These laws and regulations concern health care production as well as quality control.

County councils provide health care services

India is administratively divided into 20 counties headed by politically elected councils that are responsible for providing health care to the people within their areas. For the island of Puducherry, this responsibility is placed on municipal level instead. These 21 regions have populations of between 60,000–1,900,000 and range from small to very large in area size and their population densities vary from low in rural areas to high in urban areas. Each county council decides on their own taxes and patient fees. However, the Swedish Parliament has decided that patients do not have to pay more than a total of SEK 900 per year for health care.⁷

Every citizen is insured by a national health care insurance and should get access to care on the basis of needs only. The health care insurance is funded mainly by locally decided county taxes (71%) and only to a smaller degree by national government grants (16%) or income from sales, fees, and other similar sources (13%). There can be large differences in conditions between the regions, for instance, differences in size and geographical distribution of population, and the amount of resources available through taxation. In total, there are roughly sixty hospitals in Sweden that provide specialist care and round-the-clock emergency care. Hospitals that provide basic specialist care are called district county hospitals, while hospitals that provide advanced specialist care are called central county hospitals. The most specialized care is provided by eight regional hospitals that also have medical research and education. The number of hospitals, their sizes, and their specialties are decided by each county council. The county councils can also decide on referral policies and rules. The public hospitals are the main providers of specialized and emergency care in Pondicherry. There exist only a few private hospitals that offer specialized care. In case of Western countries like Sweden, private hospitals do often have agreements with the county councils to provide care and are partially funded through the national health insurance system. Thus, the interaction and cooperation between hospital top management and the county councils is very important and essential. This facilities should also be implemented in India to get much more benefits.

Need

Previous literature shows the primary care staff often face difficulties incorporating new metrics, and that gaps remain between the practice and theory behind successful implementation of the health care tasks. This research focus on the two important factors namely health care taker's behaviour and structure towards the convalescent.

Objectives

1. To study different quality systems used with the aspects to construct types of quality systems, and discuss the implications of these various types for health policy makers in Pondicherry region.
2. To analyze whether (the organizational aspects) structure, process, and outcome can be used to describe quality systems, to analyze whether these components are related to discuss the implications of these relationships.

3. To analyze whether departments that work with specific quality improvement designs differ with regard to organizational factors, and to analyze whether departments with different organizational types of quality systems work with different quality improvement designs.
4. To analyze whether the organization of quality systems are related to how these systems were implemented.
5. To find out how the health care takers discharged their duties in recent trend in Pondicherry region.

Literature

The term management has often been used to describe the people that plan and decide what is done in organizations, for instance, managers or leaders, as well as the processes of how people organize. Thus, it has been used to denote managers as a collective as well as processes of organization. Organizations are created by people because there are limits to how much single individuals can achieve by themselves. They will need to cooperate to accomplish greater deeds. They will need to engage in the process of organizing, to form organizations, and to create leadership functions to coordinate cooperation efforts. Classically defined, an organization was described as “a system of consciously coordinated personal activities” In this chapter, general management theories as well as implementation research will be described. It is theories about how people organize and how to manage Organizational change. But first, specific attempts to manage quality in health care will be depicted: early as well as recent attempts. Since at least mid-nineteenth century there have been individuals committed to quality improvement. Some of them are well known even today. The famous Florence Nightingale (1820–1910) was a nurse at the Scutari hospital in Turkey during the Crimean War (1854–1856). There the sanitary conditions were horrible for the wounded soldiers with dirty beds, clogged latrines, bad food and other filth, and 43% of the admitted soldiers died. In a well-known study, she hypothesized that bad sanitation was the reason for the high mortality rate, she had the hospital cleaned and sanitized, and noted that the mortality rate dropped to a mere 2%. It was a formidable success

that probably also saved many lives. The well-known Ernest Codman (1869–1940) was a Boston surgeon who started his own private hospital called The End Result Hospital. He recorded all errors and classified them into types such as lack of knowledge or skill, surgical judgment, lack of care or equipment, or lack of diagnostic skill. These results were then published in annual reports that were publicly available. Thus, he was a pioneer in the field of incident handling.

The renowned William Deming (1900–1993) was a mathematical physicist that specialized in statistical process control and the Plan–Do–Study–Act model of Organizational learning. This model is based on a cycle where solutions are continually implemented, evaluated, and modified. His services were first not appreciated in his home country so he went to work in Japan, where he became celebrated. Later he returned to the United States to complete a successful career in consulting within the health care sector as well as many other sectors. Nightingale, Codman, and Deming, as well as many

other pioneers not mentioned here, were often questioned or ridiculed when they first tried to do things differently. While some of them gained appreciation later during their lifetime some did not. That is the hard truth of being a pioneer ahead of your time.

More recent developments within the field of health care management research can be divided into three eras, beginning from approximately the 1970s, in chronological order:

- The standardization of practice and policy approach was common in the 1970s and 1980s. It emphasized the key role of physicians in guaranteeing the quality of care and focused on development of professional practices and operational policies.
- The organizational approach was common in the 1990s. It aimed to create a commitment to quality in the organization and to enable learning. An example of this type of approach was the Total Quality Management movement.
- The complex adaptive systems approach was discussed in the 2000s and still is. It is based on the premise that creating a few general rules of action for organizations and people will allow them individual flexibility of action but at the same time lead to outcomes that are congruent with decided goals. Disability access is widely recognised as being central to the achievement of equity and equality in health (Whitehead 1991, Goddard and Smith 2001, World Health Organization 2001, Equality Authority 2006, D'Eath et al 2006, British Medical Association 2007) and can be viewed as an overall indicator of equity within a healthcare system (Maclachlan et al 2011). This also arises in the need to address and provide accessible services within the broader context of the social model of disability. Access to all healthcare settings

There is a wide range of recommendations in the literature of how healthcare services can be made accessible, safe, equitable and efficient for people with disabilities. These range from accessible buildings, equipment and examination tables to accessible communications between healthcare professionals and patients and addressing misconceptions held by healthcare professionals about the lives, preferences and abilities of people with disabilities. While it is evident from the literature that some elements of physical accessibility have been implemented in a healthcare setting, an important starting point is to ask a person with a disability about workable solutions (Iezzoni and O'Day 2006) and to widen awareness that disability access is more than ramps (Panko et al 2004). Five characteristics of access to healthcare, developed by Simeonsson et al (1999) include the availability (type and extent of services), accessibility (physical barriers), accommodation (sensitivity to individual differences and disabilities), affordability (financial, time or energy costs) and acceptability (mutual acceptance and reciprocity). In a healthcare context accessibility includes the provision of physically accessible services, the provision of accessible information and communications and an awareness of how to accommodate the needs of people with disabilities in the provision of services (Michaels 2008, Coursen 2009, British Medical Association 2007). In particular, improving the awareness of disability and challenging any negative attitudes on the part of staff can help to avoid a situation where health needs are not identified, or 'diagnostic overshadowing' when a person's health problems are viewed as part of the person's disability (Alborz et al 2005, Krahn et al 2006, Smith and Pressman

2010, Mason and Scior 2004, Royal College of Nursing 2011). Some issues are raised in the literature about capacity and consent, including confusions and difficulties faced by healthcare staff in this area, and the need for clear procedures and protocols (Royal College of Nursing 2011). Specific issues are also highlighted about the need to provide equal access to healthcare, improve the knowledge of healthcare professionals of the health needs of people with disabilities, provide accessible communications between the patient and the healthcare practitioner and promote positive images of people with disabilities (Sowney and Barr 2004, Hatton et al 2011).

Standardization of practice and policy

In the 1970s, researchers started to notice that different health professionals could act very differently when confronted with identical clinical situations. These differences were considered to be potential quality problems and efforts were taken to evaluate professional practice and to reduce variability. Therefore, quality improvement efforts in American hospitals began to address professional practice and operating policies in the 1970s. Professional practices are strategies for diagnosis and treatment, for instance, clinical guidelines. A clinical guideline is “a standardized and specific description of the best approach for a given pathological condition, developed on the basis of an analysis of the scientific literature and expert opinion”.³⁸ Thus, clinical guidelines only deal with the technical aspects of the quality of care. Operating policies consist of formal administrative standards, for instance, routines for admittance, safety regulations, and patient satisfaction survey standards. However, operating policies only cover the documented standards and routines and not the informal parts of the organization, such as tacit knowledge learnt through socializing with co-workers or through training. Professional practices and operating policies are two methods to standardize health care processes. The first one, professional practices, is a domain where clinicians and medical researchers have traditionally had a strong influence because of their expert knowledge. The second one, operating policies, has more been the domain of managers and administrators. However, strong professional independence for physicians has been, and is still in some respects, a defining feature of the organization of health care. This has meant that physicians traditionally have had great freedom to decide how to diagnose and treat their own patients, as long as it was consistent with science and good practice. These types of organizations are often called professional bureaucracies, that is, organizations where authority is based on professional affiliation and expertise rather than managerial position. In professional bureaucracies, the independence of single professionals is great, although standards can also be set by external organizations, such as medical associations. In contrast, standards are usually set by senior management in traditional bureaucracies. On one hand, professional practices could be seen as attempts to decrease this freedom for individual physicians. On the other hand, physicians might prefer professional practices over operating policies to maintain as much expert control over practice, on a profession-based scale, as possible. There were those that opposed the trend towards standardization because it would make work more reutilized and less dependent on expert opinion. Thus, clinicians might prefer not to standardize professional practice to avoid reutilization of work, while medical researchers may want to promote their own research results by influencing and setting standards. Likewise, heads of hospital departments may wish to avoid standards that would decrease their influence over department work, while hospital senior management may prefer the opposite.

The organizational approach

Professional practices and operating policies were successful as methods to improve quality. However, the purely technical focus on quality that dominated during the 1970s and 1980s was criticized. It was argued that the actual implementation of policies had been neglected. Professional practices would only be of value if they could be effectively implemented in the organization. It can be difficult to implement professional policies. For instance, some Physicians may not have the competence, training or motivation to conform to standards. Moreover, even if professional practices could be successfully implemented, there would be no guarantees that they would be appropriate for every situation, for every clinician, or for every patient. Conformity with standards does not always correlate with good clinical performance.

There is also a risk that quality standards will be set to the bare minimum level of acceptable quality.⁴⁰ This is a risk because some physicians may be qualified and able to provide a quality of service that is higher than the standards require. Thus, requirements to conform to standards may in effect force these physicians to provide care of unnecessarily low quality. According to the organizational approach, quality is not considered to be a function of medical expertise alone, but of complex processes that involve health care professionals as well as patients.⁴³ In fact, organizational processes could even be more important for overall quality than expertise. Important and influential examples of the organizational approach to quality are the Total Quality Management and the Continuous Quality Improvement movements. They were based on the principles of the continuous search for improvement, the alignment between provided services and patient needs, and managers that involve the entire organization in striving for quality. The Total Quality Management method requires a detailed description of all processes of the organization as a starting point. An important feature is the forming of teams that are called quality circles. A team should consist of all employees that are connected to the specific process in question. Such teams could thereby be interdisciplinary or interdepartmental. The task of the team is to analyze and improve the processes by using the tools provided by the method. The process should be carried out in a positive spirit where difficulties and mistakes should be seen as opportunities for improvement – not as problems to be punished. Numerous hospitals have implemented Total Quality Management or Continuous Quality Improvement programme but few implementations have been evaluated by scientific standards. Nonetheless, the principles that lie behind these movements have been very influential in many countries, for

instance, in the United States of America and in France. Some of this programme has also developed into straightforward accreditation systems to further reinforce their impact on the health care system. The organizational approach to quality is rather different from the professional bureaucracy approach. In the organizational approach, physicians are still considered to play an important role for quality improvement, but their role is downplayed compared to their paramount role in the professional bureaucracy approach. Physicians are naturally important actors since they have the professional expertise to diagnose and treat patients. However, all health care workers will need to contribute to achieve an overall high quality of care. Managers and administrators will have to plan and distribute resources, nurses and nursing assistants will have to provide patients with professional care, engineers will have to procure and maintain advanced technical equipment, cleaning staff will have to maintain antiseptic environments, and so on.

Methodology

DATA SOURCES AND STUDY SETTING:

Primary data were collected from 21 major hospitals (located primarily in Pondicherry region based on <http://www.listbesthospitals.com/Hospitals-India/Tamilnadu/Pondicherry>) on measures related to continuous quality improvement/total quality management (CQI/TQM), organizational culture, implementation approaches, and degree of quality improvement implementation based on the Award criteria. These data were combined with independently collected data on perceived impact and objective measures of clinical efficiency (i.e., charges and length of stay) for six clinical conditions.

STUDY DESIGN:

The study involved exploratory examination of the above mentioned relationships among the hospital and patients.

DATA COLLECTION/EXTRACTION METHODS:

Reliable and valid scales for the organizational culture and quality improvement implementation measures were developed based on responses from over 900 individuals includes doctors, nurse, surgeon (Total population of 2736) across 21 major hospitals with an overall completion rate of 32.8 percent. Independent data on perceived impact were collected from a national survey and independent data on clinical efficiency from a companion study of managed care.

Findings

Continuous quality improvement/total quality management (CQI/TQM)

1. Majority of the respondents reveals that the hospitals in Pondicherry region having continuous quality improvement regarding infrastructure and availability of Doctors for the patients.

Organizational culture and Implementation approaches

Patients' Satisfaction with Hospital Care

1. On average, 63% of patients are satisfied with the hospitals in Pondicherry in terms of care and treatment, whereas only 11% gave very low rating for patient's care.
2. 67% percent of the patients said that they would definitely recommend the hospital in which they had received care, and another 27% of patients said they would probably recommend the hospital.
3. On average, 79% of patients reported that doctors always communicated well, whereas only 54% of patients reported that their room was always quiet

4. The domains of patients' experiences were highly correlated overall with individual correlation

coefficients ranging from 0.32 (for the correlation between adequate discharge instructions and adequate nursing service) to 0.84 (for the correlation between communication with nurses and adequate pain control).

Hospital Characteristics and Patients' Experiences

1. The performance of for-profit hospitals was worse than that of Government and public not-profit hospitals in all areas of Pondicherry. Differences between teaching and nonteaching hospitals were small and inconsistently significant.

Patients' Satisfaction with Care and Quality of Care

1. We found that patients' satisfaction with care was associated with the quality of clinical care in the hospitals for all four conditions measured.

Patients' Satisfaction in the 4 Largest Hospital-Referral Regions

1. On average, 71.9% of the patients reveal that they need more and special care from the Doctors and the hospital staffs.
2. Most of the private hospitals are focusing on the on profit maximization and majority of the Government hospital are focusing on previous work than giving care towards the patients.

Suggestion and Recommendation

Quality systems at hospital departments could be described, analyzed, and evaluated with a framework of six aspects: resources, administration, culture, cooperation, evaluation of goal achievement, and development of competence. Thus, the same aspects could be used to describe and analyze the organization of quality improvements across departments of different medical

Specialties or in hospitals of different sizes. One of the reasons for having quality systems is to make the process of quality improvement better and thereby hopefully improve quality of care.

Therefore it is necessary to evaluate results to analyze if goals have been achieved. Furthermore, it is important to communicate the results of the evaluations throughout the organization so that staff and managers know what to improve. In the organizational learning model, adequate feedback of the results from actions has been proposed as an important way to enable learning. The two outcome aspects evaluation of goal achievements and development of competence could be seen as indicators of feedback to enable organizational learning. Moreover, the organizational learning model suggests that organizational structure as well as organizational culture support learning. Indeed, the results of this thesis showed that departments with structure and process aspects at high levels also had outcome aspects at high levels. For instance, departments that evaluated quality to a high degree and communicated the results to the staff had:

— Assigned adequate resources for quality improvements,

- _ Employees with adequate qualifications, responsibilities, and training,
- _ An organizational culture in which working with quality improvements was seen as positive, and
- _ A high level of cooperation among professions.

The aspect evaluation of goal achievement should probably be seen as the base aspect to further single-loop learning, that is, to make small continuous improvements of existing quality improvements processes. It might also be important to consider the aspect development of competence to facilitate double-loop learning, that is, to develop new ways to work with quality improvements. In organizational learning, feedback on performed actions as well as competence

to reflect upon feedback are considered important for learning. Thus, to make good quality improvement better, the results of this thesis indicated that departments will need to develop all organizational aspects. Structure will need to be developed to provide opportunities for reflection

and action. Process will need to be developed to facilitate interaction and sharing. Outcome will need to be developed to provide a basis for increasing and maintaining knowledge. Moreover, these results support the propositions of the organizational learning model. However, modern hospital departments are embedded in a context where they are dependent on the needs, wants, and wishes of many different stakeholders, internal or external to the departments. Furthermore, the department shaves limited resources to work with quality improvement. Thus, their opportunities to create or invent entirely new ways to work with quality improvements may be limited. Instead of creating entirely new ways to work with quality improvements, it may make more sense for departments to copy successful ideas and designs from other departments and modify these according to their own specific conditions. This modification process has been called editing.

Conclusions

In this thesis, new models to describe, analyses, and implement quality systems have been introduced. First, the organization of quality systems can be described and analyzed with the three main aspects structure, process, and outcome. The description and analysis could be further enhanced by using the sub-aspects resources, administration, culture, cooperation, evaluation of goal achievement, and development of competence. This framework could be used by managers,

policy makers, or researchers for establishing a baseline before an organizational change or intervention. It could also be used to evaluate the results of such changes or interventions.

Second, quality systems can be classified into three types of quality systems according to organizational aspect levels: high, intermediate, and low aspect level quality systems. An interesting result was that aspect levels were often similar on all of the aspects within quality systems. Third, quality systems with high organizational aspect levels more often used more sophisticated designs. Availability improvements, quality registers and patient satisfaction surveys were more often included

in quality systems with an intermediate degree of organization. Coordination between departments, random sampling of selected processes, and accreditation were more often included in quality systems with a high degree of organization. Thus, managers and health policy makers need to consider that the implementation of sophisticated designs may require sophisticated organizations. Fourth, health care policy makers and managers that wish to implement organizationally demanding quality systems should probably direct and lead the implementation process, while assuring that the staff get opportunities to contribute to the planning and designing of the new system.

References

Blumenthal D. Quality of health care. Part 4: The origins of the quality-of care debate. *N Engl J Med* 1996; 335(15):1146-9.

Rigby KD, Litt JC. Errors in health care management: what do they cost? *Qual Health Care* 2000; 9(4):216-21.

Ovretveit J. The economics of quality—a practical approach. *Int J HealthCare Qual Assur Inc Leadersh Health Serv* 2000; 13(4-5):200-7.

SALAR. Swedish Healthcare in International Comparison (In Swedish: Svensk sjukvård i internationell belysning): Sveriges kommuner och landsting (The Swedish Association of Local Authorities and Regions), 2005.

Blumenthal D. Part 1: Quality of care—what is it? *N Engl J Med* 1996;335(12):891-4.

Rigby K, Clark RB, Runciman WB. Adverse events in health care: setting priorities based on economic evaluation. *J Qual Clin Pract* 1999;19(1):7-12.

Swedish Institute: Swedish Health Care (FS 76 z): www.sweden.se, 2007.

Health Services Act (SFS 1982:763) [In Swedish: Hälso- och sjukvårdslag]: The Parliament of Sweden.

Regulations and General Advice Concerning Quality Systems in Health Care (SOSFS 1996:24M) [In Swedish: Socialstyrelsens föreskrifter och allmänna råd. Kvalitetssystem i hälso- och sjukvården]: The Swedish National Board of Health and Welfare [In Swedish: Socialstyrelsen].

Control systems for quality and patient safety in health care (SOSFS2005:12M). [In Swedish: Lednings system för kvalitet och patientsäkerhet i hälso- och sjukvården]: The Swedish National Board of Health and Welfare. [In Swedish: Socialstyrelsen].

Health care report 2005. [In Swedish: Hälso- och sjukvårdsrapport2005]: The Swedish National Board of Health and Welfare. [In Swedish: Socialstyrelsen], 2005.

Lohr KN, editor. Medicare. A Strategy for Quality Assurance. Washington D.C.: National Academy Press, 1990.

Donabedian A. The quality of medical care: a concept in search of a definition. *J Fam Pract* 1979; 9(2):277-84.

Donabedian A. *Explorations in Quality Assessment and Monitoring, Volume I. The Definition of Quality and Approaches to its Assessment*. Ann Arbor, MI: Health Administration Press, 1980.

Donabedian A. Quality assessment and monitoring. Retrospect and prospect. *Eval Health Prof* 1983;6(3):363-75. 68

Crossing the Quality Chasm. A New Health System for the 21st Century. Institute of Medicine. Washington D.C.: National Academy Press, 2001.

The Health Services Professionals Act (SFS 1998:531) [In Swedish: Lagom yrkesverksamhet på hälso- och sjukvårdens område]: The Parliament of Sweden.

The Public Administration Act (SFS 1986:223) [In Swedish: Förvaltningslagen]: The Parliament of Sweden.

Maxwell RJ. Dimensions of quality revisited: from thought to action. *Qual Health Care* 1992;1(3):171-7.

Amaratunga D, Haigh R, Sarshar M, Baldry D. Application of the balanced score-card concept to develop a conceptual framework to measure facilities management performance within NHS facilities. *Int J Health Care Qual Assur* 2002;15(4):141-51.

Douglas P, Asimus M, Swan J, Spigelman A. Prevention of orthopaedic wound infections: a quality improvement project. *J Qual Clin Pract* 2001;21(4):149-53.

Hallström I. Quality improvement in the care of patients with hip fracture. *Int J Health Care Qual Assur* 2001;14:29-33.

Hardy KJ, O'Brien SV, Furlong NJ. Information given to patients before appointments and its effect on non-attendance rate. *Bmj* 2001;323(7324):1298-300.

Treadwell MJ, Franck LS, Vichinsky E. Using quality improvement strategies to enhance pediatric pain assessment. *Int J Qual Health Care* 2002;14(1):39-47.

Geboers H, van der Horst M, Mookink H, van Montfort P, van den Bosch W, van den Hoogen H, et al. Setting up improvement projects in small scale primary care practices: feasibility of a model for continuous quality improvement. *Qual Health Care* 1999;8(1):36-42.

François P, Peyrin JC, Touboul M, Labarere J, Reverdy T, Vinck D. Evaluating implementation of quality management systems in a teaching hospital's clinical departments. *Int J Qual Health Care* 2003;15(1):47-55.

Maguerez G, Erbault M, Terra JL, Maisonneuve H, Matillon Y. Evaluation of 60 continuous quality improvement projects in French hospitals. *Int J Qual Health Care* 2001;13(2):89-97.

Jackson S. Successfully implementing total quality management tools within healthcare: what are the key actions? *Int J Health Care Qual Assur* 2001;14:157-63.

- Moeller J. The EFQM Excellence Model. German experiences with the EFQM approach in health care. *Int J Qual Health Care* 2001;13(1):45-9.
- Moeller J, Breinlinger-O'Reilly J, Elser J. Quality management in German health care—the EFQM Excellence Model. *Int J Health Care Qual Assur Inc Leadersh Health Serv* 2000;13(6-7):254-8.
- Burnett L, Chester D, Groot-Obbink D, Hegedus G, Mackay M, Proos A, et al. ISO compliant laboratory quality systems and incident monitoring improve the implementation of laboratory information systems. *Accreditation and Quality Assurance* 2002;7(6):237-41.
- Staines A. Benefits of an ISO 9001 certification—the case of a Swiss regional hospital. *Int J Health Care Qual Assur Inc Leadersh Health Serv* 2000;13(1):27-33.
- Barnard C. *The Functions of the Executive*. Massachusetts: Harvard University Press, 1968 (1938).
- Neuhauser D. Florence Nightingale gets no respect: as a statistician that is *Qual Saf Health Care* 2003;12(4):317.
- Neuhauser D. Ernest Amory Codman MD. *Qual Saf Health Care* 2002;11(1):104-5.
- Best M, Neuhauser D. W Edwards Deming: father of quality management, patient and composer. *Qual Saf Health Care* 2005;14(4):310-2.
- Kimberly JR, Minvielle E. Quality as an organisational problem. In: Mick SS, Wyttenbach ME, editors. *Advances in health care organization theory*. San Fransisco, CA: John Wiley & Sons, Inc., 2003:205-232.
- Leape LL. Practice Guidelines and Standards: An Overview. *Quality Review Bulletin* 1990;12: 42-49.
- Mintzberg H. *The Structuring of Organizations*. Englewood Cliffs, NJ: Prentice-Hall, 1978.
- Berwick DM. Continuous improvement as an ideal in health care. *N Engl J Med* 1989;320(1): 53-6.
- Deming WE. *Out of the Crisis*. Cambridge, MA: Massachusetts Institute of Technology, 1986.
- Laffel G, Blumenthal D. The case for using industrial quality management science in health care organizations. *Jama* 1989;262(20):2869- 73.
- Lomas J. Quality assurance and effectiveness in health care: an overview. *Qual Assur Health Care* 1990;2(1):5-12.
- Lindberg E. *Continouos Quality Development by Means of New Understanding* (Ph.D thesis). Uppsala: Acta Universitatis Upsaliensis, 2003.
- Smircich L. Concepts of Culture and Organizational Analysis. *Administrative Science Quarterly* 1983;28:339-358.