

Future developments in health care performance management

Maria Crema
Chiara Verbano

Department of Management and
Engineering, University of Padova,
Vicenza, Italy

Abstract: This paper highlights the challenges of performance management in health care, wherein multiple different objectives have to be pursued. The literature suggests starting with quality performance, following the sand cone theory, but considering a multi-dimensional concept of health care quality. Moreover, new managerial approaches coming from an industrial context and adapted to health care, such as lean management and risk management, can contribute to improving quality performance. Therefore, the opportunity to analyze them arises from studying their overlaps and links in order to identify possible synergies and to investigate the opportunity to develop an integrated methodology enabling improved performance.

Keywords: health care, lean management, clinical risk management, quality, health care processes

Introduction

The pressure to “review spending” as a result of reduced public resources is affecting public health care costs, which have to be reduced by eliminating waste¹ while considering the level of quality at the same time. In addition to considering patients’ increasing awareness of health care and the growth of organizations in defense of patients, standards of quality must be guaranteed for the accreditation process, which can follow four different models, ie, “visitatie”, International Organization for Standardization, European Foundation for Quality Management, and organizational accreditation, or the Joint Commission International program, which combines the strengths of all of these models into a common health care quality evaluation.² Moreover, achievement of a high level of quality in health care is pressed for by national and international organizations,^{3–5} as well as by ethical and social concerns. All the aspects mentioned above complicate the health care system, which indeed is complex in itself. As a service business, it is characterized by intangibility, heterogeneity, and inseparability of production and consumption.⁶ These critical elements of any service company affect the degree of process standardization, marketing and communication policies, employees’ roles, management capacity, and mechanisms of quality control and performance evaluation.⁷ In addition to having these special features, health care companies also provide a unique and critical service, considering the particular condition (both physical and psychologic) of their customers.⁸

Correspondence: Chiara Verbano
Department of Management and
Engineering, University of Padova,
Stradella San Nicola 3, 36100 Vicenza, Italy
Tel +39 04 4499 8731
Fax +39 04 4499 8888
Email chiara.verbano@unipd.it

Shortell and Kaluzny⁹ have individualized other peculiarities of health care companies:

- high variability and complexity of the work, given that the nature of a substantial part of it is considered urgent and must not be delayed; the work involves a high degree of specialization and has a limited tolerance of error
- work activities are highly interdependent, requiring a high level of coordination between different professional groups
- people, who play a relevant role in the organization, are highly professional and loyal to their professional category rather than to the organization they work for
- there is little organizational or managerial control on medical staff, which strongly influences the effectiveness and efficiency of health care service.

The central element around which all the activity carried out by the health care organization revolves is the human relationships developed between the patient and health care staff. Therefore, the centrality of people (and not the exchange operation, as traditionally occurs in economic studies) is what best represents the distinctiveness of these companies.¹⁰ According to Serpelloni and Simeoni,¹¹ the general objective of a health care organization is to protect and promote citizens' health with the highest technical quality and providing customer satisfaction at the lowest cost.

This paper discusses how it is possible to pursue these different performance objectives, considering different points of view and highlighting the potential of new approaches that could enable health care organizations to successfully manage their performance, especially if adopted in a synergistic way. The paper is organized as follows: management of performance in health care is presented considering different theories in the second section; recent managerial approaches supporting performance management are discussed in the third section; and opportunities for future research emerging from the previous discussion are developed in the final section.

Management of performance in health care

The issue of pursuing different performance objectives, as developed from the definition of Serpelloni and Simeoni¹¹ in the health care context, is not new; Skinners¹² and Hayes and Wheelwright¹³ highlighted the need to choose the performance objective on which to focus at the expense of others. This approach has been discussed in the literature by several authors, who have underlined its limitations but also noted its potential, comparing it with the so-called

“cumulative” models and with the theory of performance frontiers and performance improvement.^{14–20}

In particular, many of these theories try to provide a sequence for pursuing different performance objectives. Perhaps the most famous of these is the theory of the sand cone of industrial origin,²¹ which recognizes quality as the primary target on which to focus before developing strategies aimed at improving flexibility and delivery, obtaining finally, as a causal effect, a reduction in costs. This means that there is an optimal sequence for achieving improvement in performance, following a cumulative process. In order to obtain stable improvement, first a minimum level of quality should be reached; only afterwards can the firm consider aspects of reliability. To increase the levels of quality and reliability, the next step is to improve the speed of internal processes; the flexibility of the response will be the most effective way to do this, coherently changing the organizational structure. Only after achieving a minimum level for this performance should firms consider efficiency.

The authors suggest that, by focusing on quality first, organizational abilities are nurtured more, thereby emphasizing cost efficiency objectives. Most companies that have developed quality improvement programs also report lower costs. Takala et al²² observed that all the layers of the cone are supported by the quality of the processes; cost efficiency is at the top of the cone as the ultimate goal, with only a small influence on the structural stability of the cone itself. In the study reported by Takala et al,²² the sand cone is adapted with the aim of highlighting the successful strategies that an airline company has to pursue to succeed; flight safety is placed among the basic pillars, along with high quality of personnel, know-how, and work environment and technology.

Turning to the health care context, quality plays a fundamental role, as argued before, and patient safety could constitute one of the basic pillars. Therefore, the definition of quality in health care seems to be a critical issue. Although the theory of the sand cone should be adapted to the context²¹ and to the strategies identified, quality seems to be the starting point according to many studies.^{14,15} Therefore, quality in health care needs to be defined. Because health care is a service industry, we could refer to the literature, in which quality of service has been defined as a measure of the match between quality of performance and customer expectations.^{6,23}

The distinction between customer satisfaction and quality of service has been studied by several authors, leading to the definition of Bitner and Hubbert:²⁴ “the consumer’s

overall impression of the relative inferiority/superiority of the organization and its services.” Some studies have translated these concepts into health care, despite difficulties of implementation,^{25,26} where some authors describe quality as the extent to which the desired health outcomes or “expectations” of patient services are met.^{27,28} However, considering that the right to health care is universally recognized and protected,^{29,30} quality in health care should go beyond patient expectations and satisfaction. According to the Agency for Healthcare Research and Quality,³¹ quality is doing the right thing, at the right time, in the right way, for the right person, and achieving the best possible results. In line with Buttell et al,³² quality of care should increase the likelihood of desired health outcomes, being consistent with current professional knowledge (professional practitioner skill) and matching the expectations of health care users (marketplace).

Adopting a meaning of quality of service that Holbrook and Corfman³³ would define as more mechanistic (involving an objective aspect or feature of a thing or event) than humanistic (involving the subjective response of people to objects and therefore a highly relativistic perspective), quality should also take account of other aspects, such as patient safety and error reduction. These latter issues should be considered a subset of a larger, more complex, and multidimensional concept of quality of care.

Considering the definition used by the World Health Organization,³⁴ a health system should be considered as being of a high level if it is effective, efficient, accessible, acceptable, patient-centered, equitable, and safe. These are the same characteristics recognized by the Agency for Healthcare Research and Quality³⁵ and reported by the Institute of Medicine³⁶ for health care service of high quality, ie, safe, timely, patient-centered, efficient, effective, and equitable.

To meet this definition, it is essential to pursue objectives of improving quality, reducing medical errors, and decreasing costs by eliminating all forms of waste, based on the four areas into which quality can be split, ie, technical quality, efficiency, risk management, and patient satisfaction.³⁷ However, these aspects should be adapted to a process-based perspective (eg, considering process efficiency instead of efficiency in use of resources). Therefore, based on the definition of quality used by the World Health Organization³⁴ and shared by the Agency for Healthcare Research and Quality and Institute of Medicine,^{35,36} which seems the most comprehensive so far, adequate managerial methodologies should be developed in health care to achieve

effectiveness, efficiency, patient-centered organization, and safety at the same time.

Recent developments in managerial approaches to improve performance

Managerial approaches derived from the industrial context, such as health care lean management (HLM) and clinical risk management (CRM), could help to ensure the quality attributes mentioned above, but a single approach may not be sufficient to guarantee them all. Following the definition used by Walshe and Dineen,³⁸ CRM is: “... an approach to improve quality in health care which places special emphasis on identifying circumstances which put patients at risk of harm, and then acting to prevent or control those risks. The aim is to both improve safety and quality of care for patients and to reduce the costs of such risks for healthcare providers.” Therefore, it seems that inadequate management of quality and patient safety leads to an increase in costs. The need to adopt CRM is also born from the crisis that happened in the insurance market, resulting in substantial increases in insurance premiums, which forced the need to adopt different techniques to manage clinical risk.³⁹

Clinical risk, defined as the “dark side of quality”,⁴⁰ therefore has an impact on the level of costs if not properly managed. To achieve this error reduction, ie, ensure greater patient safety, several basic CRM tools have been used,^{41–47} ie, risk identification, risk evaluation, risk treatment, and risk monitoring.^{48,49}

Following the logic proposed by Ferdows and De Meyer,²¹ quality and patient safety have to form the base of the sand cone in health care, ie, they have to be guaranteed first, consequently avoiding a negative impact on efficiency performance.

Stuart⁵⁰ highlighted, as did Taguchi, the definition of quality loss function in the industrial sector. Non-quality costs included were repairs, assistance service, waste, and warranty; moreover, Stuart verified that the amount of losses is proportional to the square of performance deviation from the target. Cosmin and Stanciu⁵¹ also considered the costs supported to ensure high levels of quality in the previous relationship. It can be expected that even in health care these relationships could be verified, given the parallel that is barely visible in at least some types of costs (eg, waste and assistance), in the costs of bad quality, and those related to preventive health care, highlighted in several studies.^{52,53} In CRM, prevention activities with double-checks

and duplications are often carried out, even if they are not always necessary.

In the health sector, industrial instruments and techniques of quality management have been adopted for quality improvement, as reported in the academic and management literature over the last 20 years. Among them are PDCA (Plan, Do, Check, Act), quality function deployment, International Organization for Standardization 9000, total quality management, business process re-engineering, Lean Six Sigma, quality control, quality assurance, quality function deployment, and lean thinking.⁵⁴⁻⁶¹ In recent years, the use of tools for lean management, for example, has been increasing, inspired by the “Henry Ford production system.”⁶²⁻⁶⁴

Despite implementation of these different practices, errors reported in health care are still unacceptable and related costs still show a positive trend, as shown by data from the Organization for Economic Cooperation and Development.⁶⁵

Starting from the definitions provided, overlaps and possible integration between the approaches of CRM and HLM emerge, connecting the concepts of added value and perfection present in lean principles (ie, precisely specify value, identify the value stream, make value flow without interruptions, pull approach, pursue perfection),⁶⁶ to the definition of quality used and required at the international level (World Health Organization). On the other side, CRM, through the tools and practices it provides, allows pursuit of perfection, error reduction, and greater efficiency.

Therefore, there is a two-way arrow connecting CRM and HLM: not only is quality the necessary basis for ensuring cost reduction, but HLM, as a business management strategy encompassing a set of principles, practices, and methods for designing, analyzing, and managing processes,⁵⁵ could support the detection of high-risk situations. In fact, considering Reason⁶⁷ and Kohn et al,⁶⁸ reliable systems can develop only if the culture of blame is abandoned and the right barriers, in terms of procedures, protocols, and process control, are erected.

HLM supporting CRM is further confirmed by the following definition of HLM.^{66,69} HLM is a managerial approach to identify and eliminate waste, while improving flow of activities to maximize customer value; it considers specification and standardization of work processes, organization of work in such a way that unexpected events are easy to spot, and deployment of activities that find and fix mistakes.

A recent literature review⁷⁰ analyzed the links and overlaps between CRM and HLM. From this study, it emerged that the two approaches are implemented separately and alternatively,

without following an integrated view. Moreover, the authors identified that there are no studies focusing on the relationship between HLM and CRM. Notwithstanding this, in HLM papers, some partial objectives of CRM are pursued and some CRM methodologies are adopted, but not all the phases of the CRM process are considered.

Some empirical cases have achieved quality improvement and patient satisfaction, reducing waste and cutting costs.^{71,72} However, other studies have shown that the measures of quality in health care are not appropriate, and little attention is devoted to other aspects, such as the impact of such approaches on employees,^{64,73} while the advantages in terms of cost and efficiency improvement are evident.^{64,74,75}

Some indications emerge from the cases examined; in particular, this approach should be adopted after providing the right education and training to both employees and management, given that if a real commitment from top management is lacking, it is unlikely that implementation of these practices will be successful. In addition, this approach should introduce a shared culture across the entire organization; it should not be adopted in some selected hospital units, because this may lead to creation of islands of excellence and achievement of local targets only. Successful implementation requires a detailed vision of the process, which involves different departments and different areas, depending on the health care process concerned.

Opportunities for future research

Two future research streams emerge from the previous considerations, the first of which concerns quality approaches and the measurement system. The following aspects should be investigated in more detail:

- quality of care should be defined in an unambiguous and shared way, considering the different points of view discussed above, and the characteristics defining quality should be usable both in adopting a system view or referring to the processes view
- research should be conducted to define quality measures allowing to evaluate and control the achievement of high quality
- replication and adaptation of the sand cone theory could be studied, identifying the strategies that contribute to obtaining high quality levels
- new managerial tools and practices, drawn in particular from HLM and CRM, should be adopted to measure, control, and improve quality in each of the components (see Figure 1).

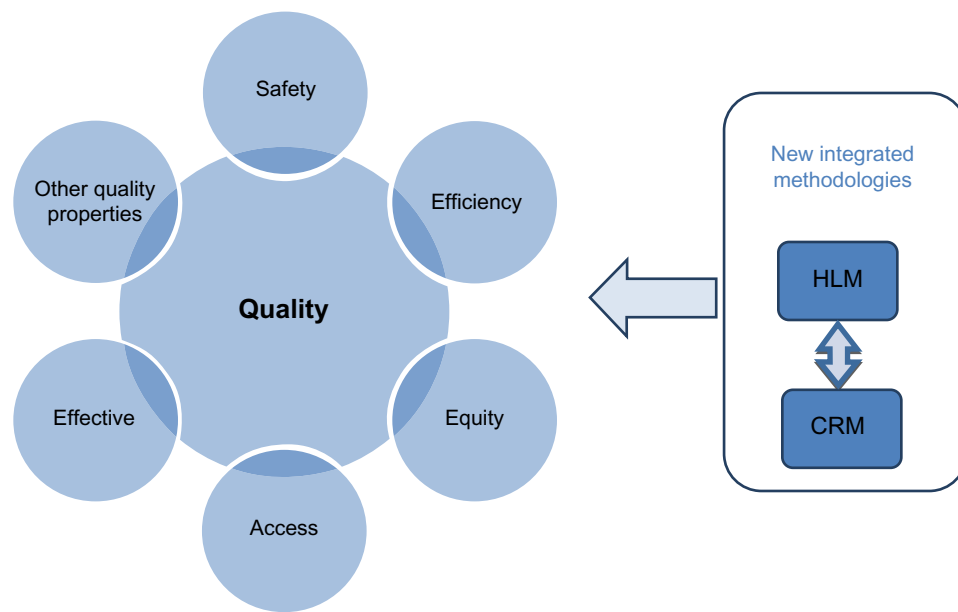


Figure 1 Quality definition and impacts of new managerial approaches on quality performance.

Abbreviations: HLM, health care lean management; CRM, clinical risk management.

Considering the multiplicity of objectives, a second research stream concerns the opportunity to develop methodologies that integrate different managerial approaches in order to gain advantages from each of them. In particular, future research could focus on the development of an integrated methodology to manage clinical processes, exploiting the synergies between HLM and CRM. This stream entails the following:

- comparing lean management project phases with the CRM process to analyze the overlaps and links between them
- investigating comparatively the main managerial tools, practices, and guidelines adopted in HLM and CRM
- identifying projects with both HLM and CRM evidence as “safety and lean projects”; theoretical and empirical research should be undertaken in order to provide guidelines to succeed in the implementation of these projects; the possibility to build a synergic process to manage “safety and lean projects” has never been considered in the literature
- the hypothesized new integrated managerial approach will probably need new professionals, sometimes called “T-men,”⁷⁶ who are able to integrate knowledge, management systems, and people; this appears to be confirmed by the presence of personnel with engineering and management capabilities in the first lean management projects with safety fallout.

Regarding the key factors for successful implementation of “lean and safety projects”, first indications could be

grasped from studies in the two different research streams. In the industrial sector, Shah and Ward^{77,78} have highlighted the need to consider “soft” aspects in addition to the “hard” ones. Lean production is defined by Shah and Ward⁷⁷ as an integrated sociotechnical system that should not neglect the social dimension during its implementation. Given that lean is a philosophy, guidelines should be followed to create a lean culture.^{79–81}

Many of the guidelines recommended for successful implementation of lean management projects are not so far from the ones highlighted by authors studying CRM.^{48,82} Moreover, Cagliano et al⁸³ give an example of early incomplete research that tried to combine some aspects of CRM with lean techniques.

The chance to develop these new research streams thus seems reasonable and reveals interesting opportunities to extend current knowledge in the academic health care literature. Further developments will contribute to finding successful solutions to overcoming health care challenges, achieving the multiple objectives of health care companies and evolving through a better society.

Disclosure

The authors report no conflicts of interest in this work.

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