

# Benchmarking in health care: A review of the literature

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## Abstract

*This paper provides a review of the 10 significant publications related to benchmarking in health care. The discussion which follows is presented according to four headings: what the study did, how the study was conducted, what was learnt from the experience, and what the implications were for health care generally. The findings of this review are reassuring in that all studies provided valuable information, in terms of clinical practice and the health care service or the benchmarking process. They highlight the importance of the maintenance of quality health care, the reduction of health care costs and the need for improved efficiency and effectiveness in providing health care.*

## Introduction

The following discussion provides a synthesis of the key themes, with appropriate applications, that emerged from a review of the literature in relation to benchmarking in health care. Whilst the review included a selection of 40 references, the following is a synthesis of the 10 most significant references in this area. The selection was made by the author as a means to understanding the breadth and range of published applications of benchmarking in health care generally.

The articles reviewed included publications from a range of journals, including those from specialty service groups, for example, *OR Manager*, *Nursing Standard*, *Journal of Palliative Care*, *Journal of Quality Improvement* and *Australian Health Review*. The most informative publications in relation to the subject were those from the *Journal of Quality Improvement*. From the perspective of a consumer of health care and as a health care worker and educator/manager, the review of the literature in health care was both instructive and practical in that all studies

provided valuable information about aspects of health care provision and benchmarking best practice as a process. Furthermore, the publications reviewed highlighted the importance of the maintenance of quality, the need for increased efficiencies and effectiveness of service and how this can reduce costs. There were several key themes that emerged in the review which the discussion integrates according to the following headings: what the study did, how the study was conducted, what was learnt from the experience, and what the implications were for health care generally.

Within the context of this paper, best practice is conceptualised as a comprehensive, integrated and participative approach to the continuous improvement of all aspects of an organisation's operations. It represents innovative practices that contribute improved performance through leadership and shared vision, customer focus, knowledge of best practices, resources and support systems, innovative human resource management, work organisation, and effective and strategic external relationships. Benchmarking is conceptualised as a continuous, systematic process for evaluating the products, services and work practices of organisations that are recognised as representing best practice for the purpose of organisational improvement. The benchmarking focus may be internal, external or functional; comparing performance to a particular function or process with the best performer regardless of the industry (Miller 1996).

## **What the studies did**

In relation to the heading 'what the study did', there were three major themes that emerged. One was the focus on an area of clinical specialist practice, within which a sub-theme emerged – an orientation towards the provision of surgical procedures and services. The reasons for this orientation are not clearly evident from the literature reviewed and may simply reflect the selection process made for this review.

The range of clinical specialisations included benchmarking for coronary artery bypass grafts (Barnes, Lawton & Briggs 1994), a surgical procedure; surgical procedures generally (Camp 1994; Compton, Robinson & O'Hara 1995), with four studies in this area; paediatric services (Ellis 1995; Porter 1995), with two studies in this area; the care and treatment of patients with a stroke (following cerebro-vascular accident) (Compton, Robinson & O'Hara 1995); and finally, a study of palliative care in the home setting.

Two exceptions to the clinical specialisation pattern, and therefore the second major theme, involved studies that benchmarked other than clinical specialisation procedures and practices. These studies included benchmarking for staff and

consumer satisfaction. They included a workers' compensation project (Mosel & Gift 1994) and a project that examined the health care services that equated with hotel services. More specifically, these included customer and staff satisfaction, and supplies (Waixel & Laidlaw 1996).

The third theme to emerge in this domain was the focused approach versus a total approach to benchmarking. In other words, there were studies that considered only a practice or service in isolation from other aspects of the entire health institution's service, and there were studies that were interested in establishing benchmarks for the whole or entire health institution's services. For example, the study by Barnes, Lawton and Briggs (1994) focused on benchmarking clinical pathways for coronary artery bypass grafts; in contrast, the study by Camp (1994) examined three broad areas – cost, satisfaction and effectiveness of services in the operating room; and finally, Patterson (1993) reported a study that benchmarked like or similar hospitals. Table 1 provides an overview of what the studies did and where they were conducted.

## **How the studies were conducted**

There were several key themes that emerged under the heading 'how the study was conducted'. The first of these themes is the use of staff. Human resources for the conduct of the project were utilised in a variety of modes, ranging from the formation of both small and large consortiums (Camp 1994; Compton, Robinson & O'Hara 1995; Ellis 1995; Fernsebner & Mathias 1995; Porter 1995) to the formation of study teams (Barnes, Lawton & Briggs 1994; Mosel & Gift 1994; Waixel & Laidlaw 1996) to the employment of consultants (Patterson 1993) to single-handed studies (Murray & Murray 1992).

The second major theme to emerge was the use of a collaborative and multidisciplinary approach to the benchmarking process. All of the studies reviewed here utilised this approach in some form or another. For example, benchmarking clinical paths for coronary artery bypass grafts (Barnes, Lawton & Briggs 1994) of necessity employed the expertise of multidisciplinary teams representing all facets of the service provided. In the cases reported by Patterson (1993), whilst consultants were engaged to undertake the project, study teams were employed to screen suitable benchmarks for the project.

**Table 1: Overview of studies reviewed**

<b>Publication</b>	<b>Country</b>	<b>Summary</b>
Barnes R, Lawton L & Briggs D (1994)	United States	Used Mediqua's five-phase guide to benchmarking for coronary artery bypass grafts. Identified four benchmark hospitals.
Camp R (1994)	United States	A task force examined cost, satisfaction and effectiveness in operating rooms at 43 acute care hospitals.
Compton J, Robinson M & O'Hara C (1995)	Australia	Outlined use of critical pathways to benchmark the care and management of people who suffered a stroke, and day surgery.
Ellis J (1995)	England	Paediatric nurses used benchmarking to develop paediatric clinical practice.
Fernsebner B & Mathias J (1995)	United States	A university hospital consortium identified five strong performers in relation to surgical services.
Mosel D & Gift B (1994)	United States	A multi-facility health care system with 11 member organisations compared workers' compensation processes.
Murray J & Murray H (1992)	Canada	Benchmarking in palliative home care services.
Patterson P (1993)	United States	1300 hospitals surveyed through detailed questionnaires.
Porter J (1995)	United States	Twelve large children's hospitals established a network for benchmarking, with admitting selected as the first focus.
Waixel B & Laidlaw J (1996)	Australia	A health service benchmarked outside the health industry and networked with its own suppliers for best practice.

The third major theme was the use of models or defined processes or approaches for the benchmarking process. A range of models were used; all involved the assessment of problems or concerns and the nomination of project foci and parameters, analysis and synthesis of data, and implementation of changes to practices or services. Most models included an emphasis on the customer and

customer satisfaction. For example, Barnes, Lawton and Briggs (1994) used a five-phase approach to their study. These phases included:

1. focus and assessment, where benchmark criteria were identified from other hospitals and on-site visits were made
2. outcome analysis and comparison, where the variances were identified between the benchmarks and the centre's coronary artery bypass grafts service
3. clinical process documentation, where the experiences of patients were documented and analysed and interviews with staff helped to determine the reasons for variances
4. benchmark process comparison, where patient care processes were compared with those of the benchmark hospitals
5. action planning, implementation and monitoring.

In contrast, the Kaiser benchmarking study set up a task force with representation from the 43 Kaiser hospitals. Their model for identifying best practice used service, costs and quality as the intersects of best practice (Camp 1994). In the first phase of the study the group brainstormed factors to be measured and the data gathering processes consistent with their model for best practice. Assisted by management, the task force identified a range of themes that emerged from the data and developed criteria for the selection of best performance. During the second phase of the study, members of the task force conducted site visits at the high rating facilities and incorporated patient outcomes.

Mosel and Gift (1994) recommend a collaborative approach to benchmarking in health care. Their model uses common work processes as the impetus for joint benchmarking endeavours and as a way of reducing costs. Sharing ideas, the workload and resources, and reducing duplication and the isolation of health care organisations mutually benefits all participants and ensures that the community benefits from the quality outcomes. The model proposes that the benchmarking topic emerge from a single organisation, which becomes the sponsoring organisation for the project. Decision criteria are defined, a list of possible health care organisations is made, consistent with the topic, decision criteria are applied to reach a consensus on the project, the benchmarking collaborative is established, and the study is conducted under the guidance of a steering committee.

A fourth theme was the benchmark mechanism. Mechanisms included the use of internal (in terms of the organisation concerned) and external benchmarks. Where external benchmarks were made, they were either local, national or international, with one exploring beyond the realm of health care (Waixel &

Laidlaw 1996). The Waixel and Laidlaw study demonstrated the value of generic benchmarking by benchmarking some aspects of health care services with those of hotel services to achieve best practice. The ultimate aim of all of the studies, however, was to achieve best practice in health care.

## **What was learnt from the studies**

Key learning from these studies can be incorporated into two major themes. One major theme included reports on the process of benchmarking, how best to go about it and some of the pitfalls along the way; the other major theme reflected the reporting of detailed and tangible data that may be used for best performance in the areas reported. There was a word of caution in Camp's (1994) article from a task force member that the themes emerging from this study should not be adopted by others until comparisons have been made outside of the Kaiser organisation. This notion is consistent with the importance of benchmarking outside of health in order to achieve national or international recognition for best practice. One lesson from the process included the need for quantifiable measures for benchmarking to allow for the detection of variations to best practice. For example, Barnes, Lawton and Briggs (1994) argue that detailed clinical paths provide measures for variations to the service. Ellis (1995) supports this premise, and Camp (1994) argues that cost-effectiveness cannot be known without tangible measures.

Qualitative information is also an important measurement process for best practice. Focus group meetings and interviews are a central component of benchmarking, providing information that serves to identify problems, issues, concerns and possible unmet needs from the perspective of the users of the service and the service providers – the organisation's various customers. Qualitative information also enhances knowledge of the quantifiable measures for benchmarking, for example, by offering reasons for variations and possible solutions to ensure best practice.

Compton, Robinson and O'Hara (1995) provide invaluable advice for those interested in using focus group interviews during the benchmarking process. They suggest that focus group meetings should be led by an experienced facilitator with a scribe to take notes on important issues that may arise in the meetings. Meetings should be no longer than one to one and a half hours and should not have more than six to eight members. Larger groups were more difficult to manage and tended to inhibit free discussion; discussion seemed to be freer in the homogeneous groups. The first question should involve all of the group, sensitive questions should be left to the end or at least following some

discussion of the issues, flexibility should be maintained and there should be a limit of four questions put to the group.

Another critical consideration is the initiation, implementation and evaluation of the benchmarking process. In the example given by Porter (1995), the chief operating officers of 12 major children's hospitals in the United States met to discuss the need for comparative data in order to improve the quality efforts at the various institutions. As a result of the meeting, a benchmarking network was established. The 12 chief operating officers, under the guidance of a hired management group, brainstormed and selected 20 clinical, operational and financial indicators.

Subsequent to this, best practice groups were formed within each of the 12 hospitals, bringing together key clinical, medical and managerial staff to discuss and share information. Organised and facilitated by the hired management group, representatives of each of the hospitals met to define indicators and ratify data collection techniques. Once the reliability of data from each of the institutions was established, information about processes and systems was shared to establish best practices. Of significance here, as in all of the studies, is the importance of the relationships between all levels of management and clinical staff, the need for honesty, openness, understanding, commitment and collaboration at all times, and the central role everybody plays during the benchmarking process. Other important features include the need for strong leadership during the benchmarking process and the need for clearly articulated goals based on a consensus view. This emphasises the importance of harnessing the human component during the benchmarking process. Without leadership and support, the process cannot be successful. Ultimately, benchmarking becomes a useful and powerful tool for quality auditing purposes and a measurable guide for selected health practices and services.

All of the studies reported some very detailed findings and results to their studies, thus providing readers with insights into the authors' 'lessons for best practice'! For example, Patterson (1993) reported when examining the top performers, the project team discovered that in six of the hospitals they were spending more on patient care and less on overheads than the typical hospital. Other common factors emerged, including the judicious use of monitoring standards across all departments and disciplines, and the use of 'vertical leveraging' – employing the expertise of skilled staff vertically, or on differing organisational levels, within the organisational structure, rather than 'horizontal leveraging' – only using the expertise of skilled staff at the same level within the organisation, for example, middle managers with middle managers, to achieve the most quality of care from staff. This was accomplished whilst minimising the use of high wage employees,

and flattening organisational structures with broader spans of control, and with a strong commitment to quality control and innovations. In the operating rooms, the six hospitals had high operating room utilisation and turnover times. The time from when one patient exits the operating room until another patient enters averaged 30 minutes, with the best facility reporting an average of 17.5 minutes. Most of the benchmark hospitals were using block scheduling.

## **Implications**

The collective implications of these studies highlight the one key theme – the mandate for health care providers to embrace the benchmarking process for improving the quality of health care service locally, nationally and internationally, and at the same time containing costs and improving efficiency and effectiveness of the service, can only be achieved through striving for best practice. From a practical perspective, this means that all health care organisations should benchmark. This calls for rigorous performance targets, streamlined care practices, a focus on customer experiences (Barnes, Lawton & Briggs 1994), and an emphasis on the costs of health care services (Camp 1994). However, this needs to be balanced with other aspects of the service embracing the concept of quality management in all realms of the service experience. Benchmark practices should involve benchmarking at various levels in and between organisations, settings and services, ensuring at strategic points throughout the development of the initiative and contingent on the indicators being measured. Furthermore, there should be strong leadership from management in order to realise this effectively (Compton, Robinson & O'Hara 1995).

Benchmarking mandates a holistic approach to health care, research- or evidence-based clinical practice (Ellis 1995) and ongoing collaboration involving all levels of staff, stakeholders and the consumer, open and shared communication, and the commitment of financial, human and technical resources (Mosel & Gift 1994; Porter 1995). The publication of findings and the sharing of information both formally and informally provides an understanding of a range of aspects of best practice and the benchmarking process. Health care managers need to be cognisant of these findings in order to ensure that their own organisations are maximising their efforts for best practice and to ensure that they continue to provide efficient and effective services at the same time as ensuring quality in a climate of increasing health costs and limited financial resources.



## Conclusion

There were several key themes that emerged in this review. They included:

- what the study did – some studies focused on aspects of clinical practice; some used a more holistic approach or total quality approach, incorporating both medical and non-medical aspects of practice and service, and others focused on non-medical concerns; two used benchmarks outside the health sector
- how the study was conducted - the majority used a collaborative and empowering approach while others, for example, the private health care organisations, engaged consultants to conduct large studies and a variety of models and approaches were used
- what was learnt from the experience – all projects provided valuable information in terms of clinical practice and the health care service or in terms of the benchmarking process
- what were the implications for health care practice generally - simply stated, a mandate for the maintenance of quality health care, the reduction of costs and improved efficiency and effectiveness.

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## References

- Barnes R, Lawton L & Briggs D 1994, 'Clinical benchmarking improves clinical paths: Experience with coronary artery bypass grafting', *Journal of Quality Improvement*, vol 20, no 5, pp 267–76.
- Camp R 1994, 'Kaiser benchmarking study to identify best practices', *OR Manager*, vol 10, no 5, pp 1, 16–17.
- Compton J, Robinson M & O'Hara C 1995, 'Benchmarking critical pathways – A method for achieving best practice', *Australian Health Review*, vol 18, no 2, pp 101–12.

- Ellis J 1995, 'Using benchmarking to improve practice', *Nursing Standard*, vol 9, no 35, pp 25–8.
- Fernsebner B & Mathias J 1995, 'Benchmarking – What does it take to be a best performer?' *OR Manager*, vol 11, no 9, pp 16, 18–19, 22–3.
- Mosel D & Gift B 1994, 'Collaborative benchmarking in health care', *Journal of Quality Improvement*, vol 20, no 5, pp 239–49.
- Miller D 1996, 'Innovations in health service management: Context for management (1)', Notes presented at the Innovations in Health Service Management Course at the University of Newcastle Faculty of Nursing, Callaghan, Australia, June.
- Murray J & Murray H 1992, 'Benchmarking: A tool for excellence in palliative care', *Journal of Palliative Care*, vol 8, no 4, pp 41–5.
- Patterson P 1993, 'Benchmarking study identifies hospitals' best practices', *OR manager*, vol 9, no 4, pp 11, 14–15.
- Porter J 1995, 'The benchmarking effort for networking children's hospitals (benchmark)', *Journal of Quality Improvement*, vol 21, no 8, pp 395–406.
- Waixel B & Laidlaw J 1996, 'Benchmarking and supplier networking – Best practice approaches', *Australian Health Review*, vol 19, no 2, pp 105–12.