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Outi Simonen, Elina Viitanen, Marja Blom

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Factors relating to effectiveness data use in healthcare management

Outi Simonen and Elina Viitanen
*Tampere School of Public Health, University of Tampere,
Tampere, Finland, and*

Marja Blom
Faculty of Pharmacy, University of Helsinki, Helsinki, Finland

Abstract

Purpose – The aim of this study is to produce information concerning factors which may hamper or promote the use of effectiveness data in secondary health care middle and upper management. Additionally, the study aims to acquire knowledge of the ways in which the managers would generate effectiveness data for use in their own work.

Design/methodology/approach – The study was conducted by interviewing department directors, chief medical officers and directors of nursing ($n = 38$) in the surgical, medical and psychiatric divisions of the five largest hospital districts in Finland.

Findings – The use of effectiveness data in management was hampered by factors relating to research, managerial work and the organization. Factors relating to the production of effectiveness data, managerial behaviour and a universal demand for evidence-based operations were considered conducive to the use of such information. Managers would cultivate the use of effectiveness data by improving its accessibility, usability and visibility.

Practical implications – The findings may help healthcare organizations in developing the use of effectiveness data in their decision-making.

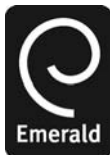
Originality/value – The paper addresses managers' willingness to apply effectiveness data in decision-making although the present quality, reliability and accessibility of effectiveness data do not meet the managers' needs. The use of effectiveness data in management can be influenced by enhancing organizational patterns of action and supporting managerial decision-making.

Keywords Effectiveness, Health services, Health care, Performance management, Knowledge, Evidence-based

Paper type Research paper

1. Introduction

The wide range of activities which fall within healthcare management's sphere of responsibilities may be best viewed from the management profession's vantage point (Torppa, 2007). Managers are required to have expertise in the management of specialists, human resources, quality, cost, and networking. Decision making concerning the organization's operation and cost, its human resource management, resource allocation, and process development, are an integral part of management (Viitanen *et al.*, 2007). A recent challenge for healthcare management is the demand for evidence-based management (EBM) (Kovner and Rundall, 2006).



Evidence can be used to enhance the manager's understanding of the matter at hand, as well as their ability to assess the effects of different decision choices (Kovner and Rundall, 2006). This is also referred to as EBM, which is concerned with influencing managerial practices. It pertains to managerial decisions and organizational practices based on the best available evidence (Kovner *et al.*, 2000; Walshe and Rundall, 2001; Kovner and Rundall, 2006; Pfeffer and Sutton, 2006; Rousseau, 2006; Rousseau and Mccarthy, 2007; Arndt and Bigelow, 2009). This challenges managers to use the best available information to support wide-ranging and complex decisions (Arndt and Bigelow, 2009).

In order to reach organizational goals, managers must make decisions. However, the information concerning the outcomes of alternative operations which supports these decisions remains lacking (Sintonen and Pekurinen, 2006). In practice, outdated information, tradition, model learning, and information provided by product demonstrators are favored (Pfeffer and Sutton, 2006). Healthcare managers are at liberty to choose which information resources they use in their work. However, it has been found that the managerial decision-making process is flawed in terms of evaluating positive outcomes of operations and organizational performance (Kovner and Rundall, 2006). This demonstrates the necessity to establish a shared understanding in order to increase the use of comparative effectiveness data in managerial work (Ginsburg *et al.*, 2000). It is a question of focussing the limited healthcare resources in a way that produces the maximum amount of health (Donald and Yen-Pin, 2000; Bryan *et al.*, 2007; Fraser and Estabrooks, 2007). It is possible to improve organizational performance by using evidence-based effectiveness data (Rousseau and Mccarthy, 2007; Rundall *et al.*, 2007). Decision-making also involves ethical considerations (van Velden *et al.*, 2005; Rousseau and Mccarthy, 2007). For instance, the ethical assessment of comparative effectiveness data entails reconciling the needs of society and the rights of a single patient. (Teikari and Roine, 2007).

Most of the studies mentioned the importance of evidence-based information, but its value as support for managerial work is still little known. Furthermore, managers value empirical knowledge in decision making (Learmonth and Harding, 2006). This could be due to a lack of access to research information. Another challenge is improving cooperation between managers and researchers and developing research information that is better suited for management (Walshe and Rundall, 2001; Finkler and Ward, 2003). Managers must also learn to assess information and gain experience in information management (Kovner *et al.*, 2000). Effectiveness data is important to all decision making because it gives added value to health technology assessment (Donald and Yen-Pin, 2000; Bryan *et al.*, 2007).

This study focusses on factors that may hamper the use of effectiveness data in middle and upper management within secondary healthcare. An additional point of interest is the way in which the managers themselves would develop the use of comparative effectiveness data in their own work. Comparative effectiveness data here refers to systematically collected data on changes in clinical conditions as a result of medical interventions. Effectiveness data illustrates which interventions produce the best health benefits for patients. Effectiveness data comprises feedback information on the effects of treatment preferences on treatment outcome. In the present study, emphasizes the decision-making process in management, which is seen as part of the work in managing profit centers and spheres of authority.

Finnish municipalities are responsible for organizing health services for their residents. Secondary health services are mainly purchased from the 20 Finnish

hospital districts, five of which are university hospital districts. The hospital districts, owned by the municipalities, have the legal responsibility for organizing secondary health services in their given areas; the responsibility for controlling the quality of these services; and the responsibility for undertaking research, development and educational activities together with health clinics and the social services (Vuorenkoski, 2008). Data were collected using interviews with department directors, chief medical officers, and directors of nursing ($n = 38$) in the surgical, medical, and psychiatric divisions of the five largest hospital districts in Finland.

2. Factors relating to the manager's knowledge use

The development of information and communication technologies has promoted the use of information in management. This enables the use of existing information in various operative fields and provides managers with faster access to and the ability to adapt information into a more user-friendly format (Lavis *et al.*, 2005). Especially helpful for the use of information are the intra-organization and external internet-based information sources (Damore, 2006; Rousseau, 2006). Another source of comparative information on managerial practices is benchmarking (Lavis *et al.*, 2005; Damore, 2006).

A manager's attitude toward research information has an impact on how they make use of information. Even if the attitude were positive toward the use of comparative effectiveness data, the role of such information in decision making remains uncertain (Ginsburg *et al.*, 2000). In order to be able to better use evidence in management, managers need pragmatic information (Rundall *et al.*, 2007; Arndt and Bigelow, 2009) that is easily accessible (van Velden *et al.*, 2005) and up to date (Kovner and Rundall, 2006). Interest in research activities and personal experience with them enhance the managers' understanding and guide their efforts (Walshe and Rundall, 2001; Rundall *et al.*, 2007). Similarly supportive is the cooperation between different research institutions and universities (Kovner *et al.*, 2000; Damore, 2006; Rundall *et al.*, 2007). Support for decision making by a senior manager may back up the manager's personal behavior (Kovner and Rundall, 2006). On the other hand, the manager's information use may be superseded by a specialist's opinion (Rousseau and Mccarthy, 2007) or personal authority, or politics (Rousseau and Mccarthy, 2007). Management training also enhances the management's ability to use information in managerial work (Rousseau and Mccarthy, 2007; Rundall *et al.*, 2007).

Information use in management is impeded by many factors. These may include the lack of exact and valid information and measurement of success (Damore, 2006). The manager's lack of experience in using evidence may impair decision making especially when the emphasis is put on personal experience and self-generalized knowledge (Learmonth and Harding, 2006), or various performance statistics (Kovner and Rundall, 2006). Experiential knowledge may therefore carry more weight than research evidence (Pfeffer and Sutton, 2006).

The organization's management culture may hamper the manager's use of information (Walshe and Rundall, 2001; Kovner and Rundall, 2006; Rousseau and Mccarthy, 2007; Rundall *et al.*, 2007). Managers may find it difficult to incorporate EBM into their managerial work because management is not a profession in the same sense as medicine or nursing. New information may threaten personal freedom to make desired decisions (Rousseau, 2006). Furthermore, staff resources assigned to gathering, analyzing, and assessing information within an organization may be insufficient (Kovner *et al.*, 2000; van Velden *et al.*, 2005). Additionally, managers themselves do not

take the time to seek out the best practices by comparing studies (Kovner *et al.*, 2000; Damore, 2006), resulting in no development in their skills to routinely use research evidence in their work (Kovner and Rundall, 2006). On the other hand, managerial decisions tend to have lengthy time limits which should leave enough time to better evaluate the information (Walshe and Rundall, 2001).

The aim of this study was to obtain information about the factors that may hamper or promote the use of comparative effectiveness data in middle and upper management within secondary healthcare. An additional aim was to identify how the managers themselves would develop the use of effectiveness information in their work.

The study sought to answer the following questions:

- (1) What factors hamper the use of effectiveness data in management?
- (2) What factors promote the use of effectiveness data in management?
- (3) How should the usability of effectiveness data be improved to better support management?

3. Subjects and methods

Interview data were collected during the summer of 2008. Participants were recruited from three university hospital divisions of five different hospital districts. The reason for selecting the three divisions, the surgical, medical, and psychiatric, was that all five hospital districts offer these services.

The highest decision-making bodies of a hospital district are the council and the executive board (Vuorenkoski, 2008; Simonen *et al.*, 2009). A hospital district is run by a manager who is responsible for the profit centers providing healthcare services. The present study refers to the medical and nursing directors working in the hospital districts' middle and upper management as healthcare management (Figure 1).

University hospital districts were chosen because they best exemplify large Finnish hospital districts and university hospitals, which have the best equipment and are expected to provide patients with highest level of medical care. The catchment area of the university hospital districts is more than three million (approximately 57 percent of

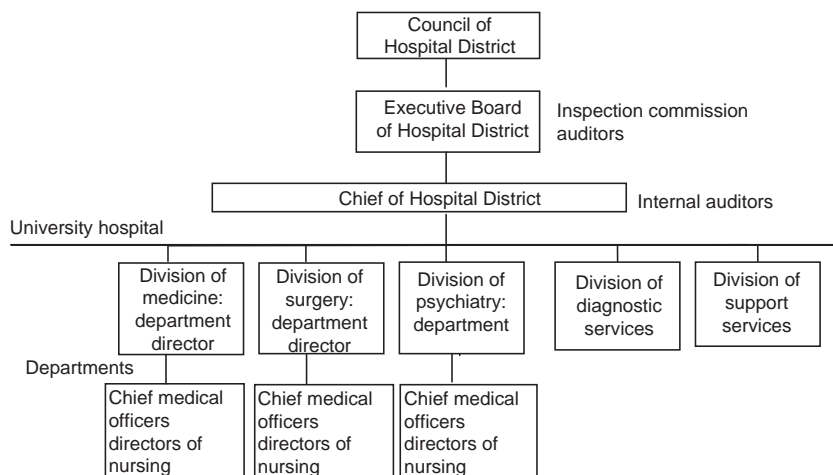


Figure 1.
Abridged organizational
chart of the hospital
districts ($n = 5$)
participating in the study

the whole population). In the three chosen departments in each hospital district, a department director, a chief medical officer, and a director of nursing were elected for inclusion in the study ($n = 38$). Three departments were chosen for the study because they represented services that were offered by all the hospital districts. The managers in question were chosen because they represented the middle and top levels of management in the departments. Participating in the study were department directors ($n = 12$), chief medical officers ($n = 13$), and directors of nursing ($n = 13$). Participant selection was made on the basis of their departments. Two participants were suggested by a department director or a nursing director because the persons originally selected declined. The study does not require ethics committee approval. The managing director of each hospital district and the respondents themselves were asked permission to conduct the interviews. Preemptive trial interviews were conducted with one chief medical officer and one director of nursing. We used a thematic interview design containing the following themes: factors hampering the use of comparative effectiveness data, factors promoting the use of comparative effectiveness data, and how should the usability of effectiveness data be improved to better support management (Table I).

Ancillary questions were formulated to support and clarify the themes (Marshall and Rossman, 2006). An e-mail was sent to all participants with information about the study, and the interviews were then scheduled via e-mail or phone. All participants were personally interviewed in their work environment by the researcher. The duration of the interviews was approximately one hour and they were recorded and transcribed. For data analysis, inductive content analysis was used (Cavanagh, 1997; Marshall and Rossman, 2006). This study is part of a larger research project. A more detailed analysis of the research data has been presented in an earlier research paper (Simonen *et al.*, 2011).

4. Findings

4.1 Factors hampering the use of comparative effectiveness data

Factors related to effectiveness research, managerial work, and the organization impeded the use of comparative effectiveness data (Table II).

Factors relating to effectiveness research. The generation of effectiveness research was seen as a difficult, laborious, and slow process. The managers reported a lack of

| Interview themes | Ancillary questions |
|---|---|
| Interviewee (back ground) information | Title, managerial working experience, number of staff Health economy training/knowledge |
| Use of effectiveness data in individual decisions of a single manager | What factors hamper effectiveness data use in managerial work? What factors promote effectiveness data use in managerial work? |
| How should effectiveness data use be enhanced | What kind of effectiveness information should be gathered? How should the collection of data be organized? How should the information be monitored? In which form should the data be available? How would the manager like to apply effectiveness data in management? |

Table I.
Thematic
interview design

| Factors relating to effectiveness study | Factors relating to management | Factors relating to organization |
|---|--|---|
| Difficulty producing effectiveness research, <i>n</i> = 19 (50%) | Lack of managerial know-how, <i>n</i> = 14 (37%) | Poor data systems, <i>n</i> = 13 (34%) |
| Difficulty measuring effectiveness, <i>n</i> = 10 (26%) | Professional autonomy, <i>n</i> = 9 (24%) | Long-standing traditions, <i>n</i> = 9 (24%) |
| Lack of resources for effectiveness research, <i>n</i> = 17 (45%) | Professional ethics, <i>n</i> = 12 (32%) | Lack of internal and external cooperation, <i>n</i> = 9 (24%) |
| Poor availability and unreliability of effectiveness knowledge, <i>n</i> = 21 (55%) | Fear of reduced appreciation <i>n</i> = 5 (13%) | Hierarchy of decision-making, <i>n</i> = 6 (16%) |
| | Lack of time, <i>n</i> = 29 (76%) | Brevity of operational planning, <i>n</i> = 3 (8%) |
| | | Negative attitudes of staff, <i>n</i> = 10 (26%) |

Note: The number (*n*) and percentage (%) denotes how many of the interviewees (*n* = 38) have expressed the same thought

Table II.
Factors hampering the use of effectiveness data in managerial work

effectiveness measures, an inadequate size of patient groups for use as research material, and incompetence in studying effectiveness. According to the respondents, undertaking effectiveness research would require additional resources which have been difficult to secure. A majority of respondents reported that the primary reason for their failure to use effectiveness data was the poor availability and unreliability of effectiveness studies. Effectiveness data exists in small quantities, and it is hard to come by and to understand. They did not trust effectiveness information because in their opinion it was not comparable or flawless. Additionally, the managers were doubtful about information from sources outside their own organization:

[...] even if the evidence existed it wouldn't be believed or it would be seen as weak evidence.

Factors relating to management. Impeding factors related to managerial work included underlying deficiencies in managerial expertise. Managers had prioritized other matters, fell back on old routines, or they had no ability or desire to demand effectiveness.

The autonomy and ethics of different professions were hindrances to the use of effectiveness data. A narrow, parochial view of one's own unit and the subjective decisions of each manager impeded the use of effectiveness data. According to the respondents, there is no unified view in decision making and matters are not necessarily considered in any wider context:

We put so much into treating a single patient that this sort of comparison between larger groups and especially comparative effectiveness – what yields the optimal health benefit for a given input – is still pretty foreign to us.

Of the managers interviewed, medical managers reported that professional ethics may prevent a clinician from using effectiveness data. The benefit of the individual patient, experiential knowledge, or the right to symptomatic treatment is preferred over larger patient groups and cost-effectiveness considerations. This was rationalized by the ethical imperative, the doctor's desire to help their patients, a part of the doctor's primary duty and continuity of patient care. Another factor hindering the use of effectiveness data was the fear of diminished professional respect or termination of

specific operations. A third of the respondents reported a lack of time as a reason for not making use of effectiveness data.

Factors relating to the organization. Utilization of effectiveness data was also impeded by a variety of organizational factors. More than a few respondents reported poor data management systems. The interviews revealed a lack of functional data systems where the management could access effectiveness data. Additionally, different areas have different data management systems, which are incompatible with each other. “Old principles” referred to unwillingness to relinquish old habits and routines or a lack of courage to embrace change. Yet another hindrance to the use of effectiveness data was the lack of internal and external cooperation in the organization. Respondents wanted to receive stronger national guidance. There was little discussion about effectiveness within organizations and the managers felt that discussions with policymakers were equally difficult.

The decision-making process was considered hierarchical, slow, and incoherent. Healthcare administration as a whole appeared sluggish. Operational planning over time spans that are too short and the lack of strategic policy definitions in favor of effective treatment hindered the use of comparative effectiveness data. It was also impeded by the staff’s negative attitudes toward effectiveness which were described as indifference, prejudice, and suspicion:

We have very long traditions and certain functions are really important to us and they probably have their place, but we’re too scared to make a critical survey of the situation.

4.2 Factors promoting the use of comparative effectiveness data

The use of effectiveness data was fostered by data generated specifically for management, the manager’s own behavior, and a universal demand for operational effectiveness (Table III).

Generating effectiveness data for management. Respondents reported that the use of effectiveness data was improved if the data were generated outside of the unit. They cited sources such as assessment physicians, expert nurses, researchers, and various interest groups:

It seems to be easier if you’re an outsider. That way it’s independent to some degree.

Cooperation with extra-organizational institutions such as polytechnics, universities, and schools of economics was considered important. National electronic information sources were also cited as factors promoting data use. Respondents also cited the

| Generating effectiveness data for management | Managerial behavior | A universal demand for operational effectiveness |
|---|--|---|
| Inter-organization experts, <i>n</i> = 8 (21%) | Manager’s motivation, <i>n</i> = 9 (24%) | Evidence-based operation, <i>n</i> = 4 (11%) |
| Extra-organizational bodies, <i>n</i> = 10 (26%) | Enablement through management, <i>n</i> = 6 (16%) | General prioritization of effectiveness, <i>n</i> = 5 (13%) |
| Availability of effectiveness knowledge, <i>n</i> = 6 (16%) | Effectiveness in communication, <i>n</i> = 7 (18%) | |

Table III.
Factors promoting the use of effectiveness data in managerial work

Note: The number (*n*) and percentage (%) denotes how many of the interviewees (*n* = 38) have expressed the same thought

constant increase in effectiveness data and improved availability of data, and the chance to study internationally comparable information.

Managerial behavior. According to the respondents, managers can promote the use of effectiveness data through their own behavior. This encompassed a positive attitude, motivation, and interest in effectiveness data. Some respondents mentioned that the manager's potential to influence others promoted better utilization of data:

It has mostly to do with whoever happens to be the manager and how they see things.

The manager's behavior also included communication concerning effectiveness. Open discussions about effectiveness, contemplation, and sharing information with staff were seen as important.

A universal demand for operational effectiveness. Universal prioritization of effectiveness data promoted its use both nationally and organizationally. Some respondents reported that realignment of organizational strategies and the criteria of EVO (in Finland, a special government grant for hospitals, given on the basis of education and research) toward effective treatment increased the use of effectiveness data. A nationwide pursuit for effectiveness, for instance in the context of planning the future of healthcare, was seen as a promotive factor.

The use of effectiveness data has benefited from the fact that managers need evidence as rationale for decisions. Effectiveness data and research evidence as a whole had been accessed when there had been evidence of better treatment outcomes or correct allocation of human resources.

4.3 Managers' ideas for enhancing the use of effectiveness data in their work

Managers' ideas for enhancing the use of effectiveness data had to do with the availability, usability, and visibility of data (Table IV).

Increasing the availability and usability of effectiveness data. The managers wanted more effectiveness research to improve the availability and use of effectiveness data. To increase the volume of effectiveness research they wanted improved effectiveness measures and research support. They felt that the existing effectiveness data should be developed to improve its availability and usability. They hoped that the data would be concise, tractable, and preferably numeric. Comparative effectiveness data should be available in easily accessible electronic format. Furthermore, effectiveness data should consist of systematically collected data on the different treatment phases so that data

Increasing the availability and usability of effectiveness data

Making effectiveness data visible

Increasing the volume of effectiveness research,
n = 21 (55%)
Generating effectiveness knowledge, *n* = 23 (61%)
Focusing on gathering effectiveness data
n = 22 (58%)
Developing data systems, *n* = 19 (50%)
Increasing resources for production of effectiveness
data, *n* = 17 (45%)

Manager as promoter of use of effectiveness
data, *n* = 15 (39%)
Integrating effectiveness data into
decision-making, *n* = 15 (39%)
Increasing local, regional and national
cooperation, *n* = 18 (47%)

Note: The number (*n*) and percentage (%) denotes how many of the interviewees (*n* = 38) have expressed the same thought

Table IV.
Managers' ideas for
enhancing the use of
effectiveness data

on cost-effectiveness could also be factored in. In using effectiveness data, managers need comparable information from within their own organizations, from comparisons between hospital districts, and from national and international levels.

The managers called for data collected from large, costly, and demanding patient groups. Economically important diseases and high-cost patient groups were seen as important in terms of comparative effectiveness data. The managers expressed a need for additional effectiveness and cost-effectiveness data on the clinical benefits of treatments and procedures.

Another important challenge was developing information management systems, especially when integrated with patient data systems. Managers wanted easy to use data management systems and national data banks for use in secondary and primary healthcare:

It should be available in electronic form on the Internet or Intranet so that everybody could have easy access to it when they need it.

Better resources for the generation of effectiveness data was seen as an integral part of improving the availability and usability of information. Managers want prepackaged information generated by a source outside their own unit. They also wanted to see improved financing and time management for effectiveness research.

Making effectiveness data visible. Managers emphasized their own role in making effectiveness data visible and in promoting its use. Comparative effectiveness data was seen as part of management. The respondents called for a unified managerial view and understanding of effectiveness, and emphasized the importance of management teams as arenas. In their opinion, effectiveness should be a strategic priority for the organization.

Several respondents reported that effectiveness data would indeed be useful in decision making. Effectiveness data should also be used by policymakers and meeting presenters:

I'd like to have data on our most common patient groups, how the interventions influenced their quality of life and functional ability after discharge.

Local, regional, and national cooperation was considered important. The theme of cooperation between different specialties, secondary and primary healthcare, and hospital districts emerged from the interviews. The managers also hoped to see nationally driven collection of comparative effectiveness data and nationally cohesive guidelines.

5. Discussion and implications

The present study links the use of comparative effectiveness data in management to different factors relating to effectiveness research, factors relating to work and the organization, as well as a universal demand for effectiveness. Suggestions for how the use of effectiveness data could be improved mainly pertained to better accessibility and usability, as well as the visibility of effectiveness data. The results show that the quantity of effectiveness data needs to be increased, its quality and usability need to be improved, and its accessibility through data systems be enhanced, and its visibility through managerial means be improved.

In this study, the use of comparative effectiveness data was hindered by inadequate resources allocated to research activities and by the uncertainties related to the current state of accessibility and reliability of effectiveness data. Organizations often fail to

invest enough time or resources in research (Kovner *et al.*, 2000; Damore, 2006), which results in a corresponding exiguity of research evidence in the organization (Damore, 2006). According to the respondents, comparative effectiveness data was hard to come by and the resources allocated to research were inadequate. Effectiveness data from outside the organization is not necessarily attained, nor is its quality trusted. The results suggest the necessity of determining whether it is more sensible to increase the quantity of comparative effectiveness data within an organization and the resources allocated toward it, or to strengthen cooperation at the local, regional, and national levels for improved availability of effectiveness data in managerial work?

Information management allows for a wider perspective on matters, improves the performance of the organization, and helps direct operations onto a desired track (Kakabadse *et al.*, 2001; Van Beveren, 2003; Rundall *et al.*, 2007). In the present study certain aspects pertaining to the management profession were seen to impede the use of comparative effectiveness data. It was also hampered by the lack of experience in managerial work, retention of old routines and habits, and prioritization of other more relevant matters. Perusal of effectiveness data in management was perceived as difficult and even threatening. The use of effectiveness data does not necessarily mean that a treatment or a procedure needs to be terminated. If a treatment or a procedure proves ineffective, management must consider alternative ways of implementing them. It follows that managers should be instructed to increasingly apply effectiveness data in decision making, and that a positive attitude toward information management should be cultivated. Introducing comparative effectiveness information into management takes time, and a positive attitude would appear to be a prerequisite for assimilating new information. It is a question of focussing the limited healthcare resources in a way that produces the maximum amount of health (Donald and Yen-Pin, 2000; Bryan *et al.*, 2007; Fraser and Estabrooks, 2007).

Professional healthcare managers should act as spokespersons for the organization and make decisions that take into account the wider context, as opposed to a single patient, their own unit or their own profession (Torppa, 2007). In this study professional autonomy and professional ethics impeded the use of effectiveness information. Decisions made in the best interest of the unit and the manager's subjective views were perceived to hamper managerial decision making. Individual doctors may make decisions independently from effectiveness data in treatment situations. There were also occurrences where the best interest of a single patient had outweighed the existing effectiveness information. Managerial behavior could also promote the use effectiveness information. Here the manager's favorable impressions of the effectiveness information generated for his or her use and a personal interest in effectiveness figured prominently. It appears that expert managers are largely at a liberty to act and make decisions as they deem most suitable. Nevertheless, it is important for the managers to be able to validate these decisions as they are made. Managers are expected to be innovative in their work. The requirement to use effectiveness data needs to be clearly outlined in the organization's strategic goals, and commitment and supervision are needed on all management levels.

Information use in management also requires effective data systems in the organization (Lavis *et al.*, 2005; Damore, 2006; Rousseau, 2006). Nearly all the managers in the present study felt that the present data systems impeded the use of effectiveness data. The current data systems either made it difficult to obtain effectiveness data or it was available in a format that resisted application. Results suggested a need for data systems which would be more user-friendly, efficient, and better compatible with the

data systems of other organizations. This attests to how effectiveness data better tailored to the needs of the managers and easily accessible through electronic systems could increase its use in management. This could also have an impact on their motivation and interest in effectiveness data.

The results also show that the universal demand for effectiveness served as an incentive for using effectiveness data. The use of effectiveness data was encouraged by organizational strategies emphasizing a universal demand for effectiveness and by the effectiveness data generated by national and international organizations. For instance, the best available research evidence on effectiveness and cost-effectiveness is available to those making decision in healthcare. For example, the International Network of Agencies for Health Technology Assessment (INAHTA) employs a process known as Health Technology Assessment (HTA), which provides healthcare decision-making bodies with scientific data on operational effectiveness and cost-effectiveness.

According to Bryan *et al.* (2007), decision making in healthcare calls for economic analyses of cost-effectiveness. In the present study, the managers made little use of cost-effectiveness data. They suggested that the availability of data on effectiveness and cost-effectiveness should be improved. Likewise, both the quality and usability of effectiveness data should be improved. It appears that secondary healthcare management needs effectiveness data in a compact form, ready for quick consumption and application. Expert assistance would make it possible to generate effectiveness data to support managerial decision making.

A manager is responsible for ensuring that appropriate services are provided within the limits set by the available resources (Fraser and Estabrooks, 2007). The managers in the present study wanted to increase the use of effectiveness data in their own decision making and to make it more visible. Open discussion, a heterogeneous work environment, and a shared view of effectiveness could improve the use of effectiveness data. The results show that the managers would like to base their decisions on effectiveness data to demonstrate that the decision-making process is well grounded. Research evidence increases the understanding of the status of effectiveness data in managerial work. The use of effectiveness data is necessary in order to avoid unwitting support of ineffective interventions. It is a relatively simple question of doing things that benefit the patients.

One objective of this study was to generate information about the use of comparative effectiveness data from the viewpoint of middle management. Managers having a background in either medicine or nursing were considered to be key people. This enabled a more comprehensive survey of how effectiveness data is applied in managerial work. The study adopted a qualitative design. The interviews were authorized by hospital district managers and the interviewees gave their consent to participate in the study. The reliability of the study may have been limited by the widely ranging managerial work experience of the respondents. Furthermore, the managers' familiarity with comparative effectiveness data may vary, which may in turn affect the results.

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Corresponding author

Outi Simonen can be contacted at: outi.simonen@kolumbus.fi