

Caring for Accounting

A study of the use of accounting information in a hospital clinic

Anna Heimdahl♠

Sanne Ståhl♣

Abstract

This thesis explores the role of accounting for decision-making in a healthcare setting, more specifically within a hospital clinic, using a single qualitative approach to receive an in-depth understanding of how and where accounting information is used. A developed research stream within previous research uses professional roles as a central explanatory factor when it comes to attitudes and behaviours towards increasing uses of accounting information. However, receiving indications that interesting findings exploring the use of accounting may not be found with this perspective, the focus is somewhat turned to receive a more granular understanding of the use of accounting in different situations: *treatment choice*, *operational resource management* and *strategic resource allocation*. For the analysis, the framework presented by Burchell et al. (1980) is used to better understand the different uses of accounting information in a clinic setting. Thus, our findings have managerial implications as they indicate that accounting tools should be adapted to the situation in terms of how and where it is used. In practice, these findings can be applied for managers in creating ways to control operative work in a healthcare setting. Further, the findings also point to an interesting future research stream, within the research of accounting in the public sector, which explores the role of accounting for decision-making in a more differentiated way than has previously been observed.

Keywords: NPM, Decision-making, Healthcare, Public sector, Accounting information, Treatment choice, Operational resource management, Strategic resource allocation

Tutor: Ebba Sjögren

Date: 16.05.2016

♠ 22191@student.hhs.se

♣ 22419@student.hhs.se

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Anna Heimdahl Sanne Ståhl

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1. Introduction

“My doctors have an economic mind-set. It can easily be that you do not think like that, but you just think that I should give the best care, or that it is just the patient you have in front of you that you should take care of. But overall, you must consider the patient that is standing outside the door, the one that should come in. If you just put all resources on the patient you have in front of you, then the other patient will never be able to get in.” (Clinic manager 1)

About 40 years have passed since reforms aiming to increase resource- and cost efficiency in the public sector started to be introduced (Hopwood, 1984; Hood, 1995); reforms that were summarised under the label New Public Management (NPM) (Hood, 1991). Accounting has a central role in NPM reforms and thus opened up a new field for research within accounting controls. A substantial number of researchers have investigated the effects of the introduction of these reforms and the increased use of accounting in the public sector which they have entailed (see e.g. Coombs, 1987; Preston, 1992; Broadbent, Laughlin & Willig-Atherton, 1994; Lapsley, 1994; Jacobs & Barnett, 1996; Jones & Dewing, 1997; Broadbent & Laughlin, 1998; Jacobs, 1998; Doolin, 1999; Kurunmäki, 1999; Blomgren, 2003; Charpentier & Samuelson, 1996; Jacobs, Marcon & Witt, 2004; Kurunmäki, 2004). One dominant stream within research on accounting in healthcare organisations¹ has been concentrated on how different professional groups have tackled these induced changes which has been reflected in studying their attitudes and behaviours towards accounting information² (see e.g. Jones & Dewing, 1997; Jacobs, 1998; Kurunmäki, 2004; Jacobs, 2005). Results are split; showing evidence of professional groups embracing accounting information, strongly resisting it or smaller groups of professions taking on the accounting tasks, enabling other groups to continue their work as before without intrusion of an accounting logic (Coombs, 1987; Pollitt et al., 1988; Jacobs & Barnett, 1996; Broadbent & Laughlin, 1998; Jacobs, 1998; Blomgren, 2003; Kurunmäki, 2004; Jacobs, 2005). However, it seems like a focus centring on professional roles may not fully explain the role of accounting and the behaviours it induces in the healthcare setting as researchers have provided findings that, even if discussing from a perspective of professional roles, the use of accounting differs depending on the decision-making situation (Coombs, 1987; Doolin, 1999; Jackson et al., 2014). Therefore, it seems appropriate to entail a more nuanced starting point, assuming that accounting can be used

¹ In this thesis we define healthcare organisations, or a healthcare setting, as organisations such as hospitals, clinics and care centres. Companies developing and manufacturing products such as materials, pharmaceutical and devices used in such healthcare settings are thus not included

² Accounting information is in this study defined as information of a calculative nature aimed at helping managers and operative staff within the organisation to make decisions

in various ways in different situations, when studying the use of accounting information. However, most researchers have up to date investigated the role of accounting from a rather undifferentiated view when it comes to the situation in which accounting information is used (e.g. Jones & Dewing, 1997; Kurunmäki, 1999; Jacobs, 2005). The aim with this thesis is therefore to contribute to previous research by deviating somewhat from the focus on whether professional roles use accounting or not for operational decision-making and instead assume that accounting is used, but that how it is used depends on the situation. This is further supported by the fact that NPM reforms have impacted clinicians for over 30 years. Hence, one can argue that specific professional groups should no longer be able to work completely independent of accounting information but at least to some extent be influenced by this, as illustrated in the opening quotation. Investigating empirical findings of previous research more thoroughly further provides evidence of three possible decision-making situations where observations show that accounting information is used for operational decisions; in the treatment choice (Jacobs, 1998; Llewellyn, 1998; Blomgren, 2003), for operational resource management (Kurunmäki, 1999; Lehtonen, 2007; Kraus, 2012; Carlsson-Wall et al., 2014) and in strategic resource allocation (Kurunmäki, 1999; Doolin, 1999). Thus, it becomes interesting to investigate the use of accounting in these situations more thoroughly to achieve a more differentiated understanding. By focusing on different situations where accounting is used and highlighting accounting's different roles in decision-making within a hospital clinic, our study also aims to answer to the call of Abernethy et al. (2007) for more field-based research addressing this area in a clinic setting. Seeking to answer the above stated gaps this thesis thus aims to answer the research question:

How is accounting information used in operational decision-making at a hospital clinic?

To understand the role of accounting in operational decision-making the framework developed by Burchell et al. (1980) will be used in the analysis of the empirical findings. Here the role of accounting is divided into four different ones; accounting being used as an answering-, learning-, ammunition- and rationalisation machine. The composition of the framework, which provides alternative uses of accounting information, leverage our analysis on how accounting is used in specific situations to support decision-making, rather than assuming the use of accounting to be equal across different activities at a clinic. Further, as the case setting is within an area where medical or ethical considerations could potentially be viewed as clashing with more rational accounting ones (Lapsley, 1994; Broadbent & Laughlin, 1998; Llewellyn, 1998), a particular interest of this study when discussing how accounting is used in operational decision-making is

thus this, perhaps, inherent tension and how clinicians manage it. Research has previously discussed this tension in relation to clinicians distancing themselves from accounting information to preserve their professional freedom (Lapsley, 1994; Jones & Dewing, 1997) leading to some professional groups absorbing accounting controls more than others (Broadbent & Laughlin, 1998; Kurunmäki, 2004; Jacobs, 2005). But as this paper takes another analytical standpoint, meaning that it might not be professions that absorb accounting controls, it becomes interesting to investigate how this dilemma is managed if the concept of professional groups does not.

To answer this research question, a single qualitative case study has been carried out at an ophthalmology clinic (henceforth 'Specs') operating within a public Swedish hospital. The clinic was considered a good research object as it has recently gone through changes affecting them both financially and medically and on top of that experienced organisational restructurings which arguably may have forced employees to consider their way of doing things. One of the changes was that the county in which Specs operates introduced care choice reforms for some parts of the ophthalmology speciality a few years ago. A care choice reform means that patients can turn directly to the specialised unit of their choice, private or public, and the reform also makes it easier for new actors to establish their own operation (SKL, 2016). The introduction of the care choice reform also led to changes in how Specs is funded by the county; from previously having a set budget to now receiving a predetermined amount for each patient treated within the care choice reform. The other change is that the ophthalmology specialty, which has previously been characterised as a medical specialty without any particularly expensive treatments, has since some years back access to three ground-breaking but expensive pharmaceuticals. This has induced an intense discussion on what pharmaceutical to use, when to use it and how much to use. Thus, these two changes imply interesting implications for the operations of Specs, making it a suitable clinic to study when investigating our research question.

When drawing conclusions from the analysis of the empirical findings, we confirm our hypothesis that depending on situation, accounting possesses different roles for decision-making. In line with previous literature (e.g. Coombs, 1987; Lapsley, 1994; Chua & Preston, 1994; Kurunmäki, 1999), it is shown that, foremost in the treatment choice, decisions are made predominantly based on medical considerations leading to accounting information primarily being used to rationalise already made decisions. However, other uses of accounting are also observed. In the treatment choice accounting can at times be used to support decisions when the medical consideration is doubtful or when choosing between two medically justified alternatives.

In decisions surrounding the treatment situation, accounting information influence decisions in both how to manage resources most efficiently and when allocating them for and within the clinic. Accounting is in these situations used to learn about different alternatives on operational decisions for resource efficiency but also in negotiations by visualising effects of one's ideas and get arguments through to others. Further, as illustrated by the opening quotation, interviewees at Specs frequently discuss the dilemma between the medical or ethical consideration and accounting information, which is also a topic addressed in previous research (Broadbent and Laughlin, 1998; Llewellyn, 1998). We argue that this tension may never and perhaps should never be solved, but instead managed by letting accounting impact decisions in some, more suitable, situations while decisions in other situations are exempted from accounting considerations. Contrary to previous literature (e.g. Jacobs, 1995; Kurunmäki, 2004; Jacobs, 2005), we argue that the use of accounting information is dependent on situation, or task, rather than on the professional group. Thus, as our last conclusion, it is suggested that it is no longer a question of who uses accounting information but instead in what situations, or tasks, and how it is used.

Outline

In the following chapter we will start by going through literature in the field of accounting control in healthcare organisations including for example views of the changing attitudes and behaviour from the introduction of NPM reforms. In the end of this section, three overall decision-making situations retrieved from the empirics of previous research is outlined, which will later be used in dividing our own empirical findings as well as when analysing these. After that the theoretical framework by Burchell et al. (1980) is presented, which is used as a tool to analyse the specific use of accounting in different decision-making situations. In chapter three, we will thereafter introduce how we methodologically have conducted this case study including the design of the study, decision on how we have collected and analysed the data and also limitations of this way of working. In chapter four, the empirical data collected both through interviews as well as secondary sources such as internal documents of the clinic's personnel schedules and Balanced Scorecard is presented. The findings are divided into the three situations presented in the literature review. Thereafter, in chapter five, the collected data will be analysed using the theoretical framework as well as put in contrast to previous research. The paper is summarised by presenting conclusions of our study and suggestions for future research in chapter six.

2. Literature review

Section 2.1. presents previous research discussing different areas of the use of accounting predominantly in the field of healthcare; the introduction of reforms under NPM and changes in accounting control systems, healthcare professionals' attitudes towards accounting, changing behaviours within the professional role and the use of accounting in different decision-making situations. Section 2.2. will outline the framework developed by Burchell et al. (1980) which supports the analysis of the role of accounting in decision-making. Examples of the use of this framework by previous researchers will also be discussed. In 2.3. the gaps in the existing literature which this thesis aims to fill as well as the conceptual framework used to analyse the findings from the case study will be presented.

2.1. Previous literature discussing accounting in healthcare organisations

2.1.1. NPM - the broad introduction of reforms in welfare states

Accounting controls in the public sector has been a frequently studied area of interest for management accounting researchers during the last decades (see e.g. Hopwood, 1984; Chua, 1994; Lapsley, 1994; Hood, 1995; Charpentier & Samuelson, 1996; Jones & Dewing, 1997; Jacobs, 1998; Kurunmäki, 1999; Kurunmäki, 2004; Groot & Budding, 2008; Jackson et al., 2014). Already in the 60's and early 70's, Western countries experienced increased pressure to broaden the concept of accountability in the public sector to not only be a consideration for the financial department but rather to influence the whole organisation and its responsibilities. Following the 1970s' recession, the public sector received an intensified demand for improved management, more efficient use of resources and a greater accountability (Hopwood, 1984). In response to the new demands on welfare states, several reforms were implemented during the 80's and 90's with the aim to improve the control of costs and enable management of public sector organisations to be more in line with private companies (Hood, 1995). These reforms were gathered under the name New Public Management (Hood, 1995). Accounting played a central role in realising these reforms and resulted in several changes in accounting control systems. For example, some accounting implications resulting from NPM reforms were: (1) the introduction of cost centres, (2) more stress on identifying costs and understanding cost structures, (3) introducing norms from the private sector, (4) a greater focus on the bottom line, (5) a more "hands-on" management using financial data for management accountability, (6) performance

indicators and audit, (7) a move towards a broader cost centre accounting rather than a detailed accounting for specific activities (Hood, 1995).

Numerous articles have since then studied the effects of the introduction of NPM reforms and the increased use of accounting (Hopwood, 1984; Czarniawska-Joerges & Jacobsson, 1989; Chua & Preston, 1994; Lapsley, 1994; Charpentier & Samuelson, 1996). Hopwood (1984) studied the use of accounting in the early ages of NPM reforms and discussed how accounting was used to legitimise organisations' actions as plans, budgets and practices were seen as symbols for the organisation's commitment to efficiency rather than to actually account for them and increase operational efficiency. Hence, Hopwood (1984) was somewhat critical to the, at the time, current use of accounting and concluded his article by saying: *"Perhaps we should use the current pressures for change as a basis for starting to account for accounting and to ask questions about what is actually achieved in the pursuit of efficiency."* (Hopwood, 1984, p. 158). Hopwood's view of accounting as rather serving as a tool to legitimise actions than to account for them is later shared with several researchers (Coombs, 1987; Lapsley, 1994; Chua & Preston, 1994). For example, Lapsley (1994) who studied the numerous attempts that was made within the National Health Service (NHS) in the UK to implement an internal control system, argues for the same view. Key decision-makers were here decoupled from financial control, meaning that key decision-makers operated independently of it. As budget holders neither had incentives nor ability to influence or control the costs that they were responsible for led to accounting within NHS being used as legitimising. However, there are also researchers who on the contrary observed a more intended use of accounting when new reforms were implemented, resulting in for example operational efficiency (Charpentier & Samuelson, 1996). Hence, in the early years of NPM reforms, a broad stream of research investigated the effects of these newly introduced reforms in the healthcare setting, but evidently reported different outcomes and uses of accounting.

The different outcomes of the use of accounting within healthcare are often discussed in terms of the complexity of the medical profession. The medical practice is not like any other profession, and as discussed by Lapsley (1994) for example, it cannot entirely be compared to market-based organisations from where accounting first evolved. Efficiency does not solve all uncertainties in healthcare organisations compared to market-based organisations where it may determine success or failure. The healthcare service process has variable technologies, such as the clinical freedom and judgement of different treatments for the same illness, as well as outputs that are difficult to

define and measure. Hence, the comparably simple technologies of accounting may not solve all uncertainties. In the case study by Lapsley (1994), the tension was managed by decoupling key decision-makers, such as doctors, as it preserved their autonomy and minimised pressures that might arise when complex medical decisions that are not captured by relative simple and standardised accounting procedures had to be made. Somewhat induced by this discussion on accounting's role in the complex medical practice, a stream of research evolved where the focus was steered towards attitudes and behaviours of healthcare professionals rather than the effects and functions of accounting reforms when discussing accounting's role in the healthcare setting. Thus, this research stream will be discussed in the following sections.

2.1.2. Healthcare professionals' attitudes towards the use of accounting information

The interest to extend the understanding of clinicians' attitudes toward accounting control systems and the increased use of accounting in the public and healthcare sector has been an interest among several researchers (Coombs, 1987; Jones & Dewing, 1997; Jacobs, Marcon & Witt, 2004; Kurunmäki, 2004). Studies have highlighted the resistance from healthcare professionals against the introduction of enhanced accounting controls in the sector (Pollitt et al., 1988; Broadbent, Laughlin & Willig-Atherton, 1994; Jacobs, 1995; Broadbent & Laughlin, 1998; Doolin, 1999; Lapsley, 2008) and emphasised the tensions between accounting information and the medical culture as one reason for the resistance (Lapsley, 1994; Jones & Dewing, 1997). It has also been argued that the increased use of accounting techniques have been seen by clinicians as a threat to their autonomy and values (Dent, 1991; Broadbent & Laughlin, 1998).

Doolin (1999) studied the introduction of a new accounting system: a casemix management system, where clinical activity was controlled by predetermined funding for different patient categories. During the implementation, management tried to convince the clinicians to embrace the new system by emphasising the positive aspects such as enabling peer review and the establishment of clinical protocols to increase standardisation of treatments. A project team was also created with the sole purpose to create consensus among the clinicians towards the new control systems. Despite these efforts, quotes from the doctors and nurses in the study showed that they still did not support the change and their underlying attitudes remained the same. Focus in the casemix information was on costs and financial perspectives and little attention was paid to the medical- and clinical benefits, which was one reason for clinicians not embracing it. Moreover, clinicians were reluctant to have their work and practice scrutinised and medical freedom violated and therefore effectively resisted the casemix information by pointing out flaws

in the system such as the validity of the construction or finding other potential differences that could explain variances between individual clinicians' practices. Similar attitudes of resistance were found in Jacobs' study from 1995. Only one clinic director in his study saw the benefits of accounting controls and argued that he wanted to use them to eliminate inefficient practices, restrict prescription of some expensive drugs, commence peer review and establish standards for patient treatment. However, he was confronted by clinicians who resisted the changes, saying that these practices infringed on their medical judgement and blamed him for taking the management's side.

Contrasting attitudes among doctors were however found when Jacobs (1998) studied the introduction of cost- and budget reports in General Practitioner (GP) associations in New Zealand. He found that GPs perceived accounting as a process of peer review and education, rather than a threat to their medical autonomy. According to Jacobs (1998), the reason for why GPs in his study did not perceive the new accounting system as a managerial threat but rather as an extension of their medical education was that by having monthly reports, they could also learn and develop by the information received and hence become better GPs. Jacobs argued that a very important aspect for why the GPs were comfortable with the level of scrutiny and peer review was that it was performed by other GPs, who shared the same interests, rather than by administrators.

However, research has also demonstrated that clinicians' attitudes are not "black or white", i.e. accepting or not accepting accounting controls. Rather clinicians have shown different levels of acceptance and positive attitudes towards some parts of the use of accounting while more negative to others. For example, when Coombs (1987) studied administrators and senior doctors' attitudes towards new cost information in Swedish hospitals, doctors expressed a unified support for the increased use of cost information. Clinic managers clearly stated that resources for new procedures could only be received if the hospital was able to achieve savings. Also, they knew that the only way to identify where these savings could be made was if data on costs in the different activities in the hospital was collected. Hence, the clinic managers had an overall positive view towards the increased use of accounting and cost consciousness among doctors since it enabled them to reallocate resources more efficiently. However, at the same time while having positive attitudes towards cost data, there were opposing attitudes towards the mechanisms used when prioritising different groups of patients and therapies in dividing the total resources available. Different attitudes or tensions could be observed both between different

doctors, doctors and administrators and even within one single doctor. Some argued that all decisions solely should be made on the basis of cost data and medical studies on efficiency and outcome, hence dividing resources to treatments that are both medically and economically seen as most efficient. This was in line with the administrators' view of resource allocation and use of cost data. Other doctors however argued that resource usage should be decided upon by the actual availability of clinical judgement and medical techniques themselves, meaning that when a new medical technique is developed it should be used regardless if it conflicts with the availability of resources. In summary, one could see dual attitudes towards the new accounting system. To some extent clinic managers acquired characteristics of administrators' philosophies, but at the same time they were still partially restricted by their strong medical ethos.

Even though the literature on attitudes towards the changing environment within healthcare organisations that came with NPM reforms has shown different outcomes, some clinicians seem highly resistant to the changes while others tend to be more open, it is important to note that the medical profession can be seen as somewhat different to other professional groups, as discussed above. It can therefore be argued that it is legitimate for the medical profession to question or at least challenge such changes. The extensive educational program required in order to practice medicine gives them knowledge in a field that is difficult to question from people outside of the professional group. As cited by Llewellyn (1998): *"Clinicians have been successful in retaining the power to define the true nature of their domain of activity - the problem of illness (Armstrong, 1993). The interpretation of clinical expertise being fixed in the public mind as the outcome of a technical process mediated through judgement (Power, 1995). Therefore clinical expertise is the publicly accepted discriminator between effective and non-effective medical treatments."* (Llewellyn, 1998, p. 42). Hence, the discretion of the medical profession might legitimise clinicians' questioning of the intrusion of accounting in their operational work. Healthcare professionals are thus not just any professional group opposing change. On the other hand, as the medical profession perform a lot of measurements, introducing yet another measurement, such as accounting, potentially means that there should be a greater tendency for the clinicians to embrace such new tasks (Burchell et al., 1980).

2.1.3. Changing behaviours of professional groups as accounting controls increases

Along with the research on attitudes towards an increased use of accounting information within healthcare organisations, there has been a growing discussion whether clinicians have accepted accounting as part of their medical profession or if they have tried to find workarounds in order to

keep their operating activities as before; research on the effects of clinicians' behaviours. The division of clinicians who either embrace or refuse accounting logic has been seen as the latter's reluctance to give up on their medical freedom and autonomy. This has also been discussed in terms of the different philosophies that characterises different professions which in turn may create tensions when changes arise (Coombs, 1987; Abbott, 1988). For example, Abbott (1988) suggested that there may be a competitive or jurisdictional battle between professional groups. Researchers have then shown that these differences between professional groups have created different outcomes and behaviours in the use of accounting by both clinicians and administrators (see e.g. Coombs, 1987; Broadbent & Laughlin, 1998; Kurunmäki, 2004; Jacobs, Marcon & Witt, 2004; Jacobs, 2005; Kraus, 2012). Broadly speaking research has presented two outcomes of changing behaviours of professionals in public sector organisations resulting from the reforms introduced under NPM; either fundamental changes to core activities, or little to no change. However, variations in form and intensity of these outcomes have been observed.

In some cases, a group within the managerial or operational core took on the accounting tasks, leaving the work of clinicians unaffected by accounting influences (Broadbent & Laughlin, 1998). This group could also be set up outside the organisation, as was the case for general practices in New Zealand where local independent associations responsible for accounting practices were established (Jacobs & Barnett, 1996). The increased use of accounting information was here perceived to impugn on the medical profession's autonomy and therefore resisted. Broadbent & Laughlin (1998) termed such groups "absorption groups" and the so called "absorption" of the accounting tasks were shouldered by senior doctors or clinic directors in their study. They further claimed that even the most intrusive changes seemed to be absorbed by a small group rather than affecting the operative core. Along with studying GPs, Broadbent & Laughlin (1998) also studied headteachers reactions to NPM reforms as they were claimed to be affected in similar ways. Senior GPs and headteachers were argued to be similar as they are both involved in the core operative activities at the schools and general practices. This thus put them in a special position in terms of decision-making in being closer, and in a sense more affected by the decisions made. Both groups showed attempts to absorb the administrative process either by themselves or through handing the tasks to nurses or assistants (Broadbent & Laughlin, 1998).

Kraus (2012) presented yet another potential outcome. In his study on inter-organisational relationships within the public sector, he investigated the effects from increasing accounting influence on core values of the home helps in the services for home care in Sweden. Here, there

was not a small group absorbing the accounting tasks but rather all front-line staff translated the financial numbers into concrete costs for their different services performed. By being flexible, they realised that they could put less effort on easier or healthier pensioners in order to stay longer with those pensioners seen as more difficult and in need of more help. As the enhanced financial awareness made the home helpers more aware of the relation between the social contracts and their own performance, tasks that was not included in these contracts were defined as “other responsibility” and could thus be neglected (Kraus, 2012). Hence, accounting information was used to a higher degree in the inter-organisational field than internally.

Instead of observing different groups taking on the accounting tasks, Kurunmäki (2004) argued that when reforms increased the financial focus in the Finnish hospitals accounting techniques were transferred to all clinicians. Clinicians had fundamentally changed their core values and incorporated accounting controls into their daily operations; the profession had become hybridised. She thus asked for a more nuanced understanding of inter-professional encounters than the jurisdictional battle between administrators and doctors as discussed by Abbott (1988). Kurunmäki (2004) suggested that there must be a weak accounting profession in order for accounting to become hybridised in the medical profession. Jacobs (2005) then built on Kurunmäki's (2004) study and investigated whether accounting techniques had been incorporated into healthcare organisations in Italy, Germany and the UK. Kurunmäki (2004) argued that hybridisation would occur in the case of a weak accounting profession as this was the result in her own study. Jacobs (2005) further suggested that accounting must be reflected in the education, training and socialisation of doctors for hybridisation to occur, in addition to or in absence of a weak accounting association. This hypothesis was based on research arguing that the education, and within this the socialisation, is central in determining underlying basic assumptions of the professions (Freidson, 1975; Tuckett, 1976; Jones & Dewing, 1997). In all of the three countries studied, only a small group within the profession had taken on the accounting practices. These findings were therefore not in line with the reasoning of Kurunmäki (2004) as even if both Germany's and Italy's accounting profession had weak professional associations, no hybridisation of the medical profession could be observed. Accounting was further not incorporated in the medical education of doctors, speaking in favour of the hypothesis of Jacobs (2005) but as some doctors were more willing to engage in accounting tasks it did not provide explanations for the full picture. Thus, Jacobs questioned how static the professional jurisdiction is, since it could be argued that values can be changed in response to external or internal disturbances (Abbott, 1988). Moreover, Jacobs (2005) gave indications to how behaviours of

clinicians when exposed to accounting information may depend on the country studied. For example, in the UK research had pointed to little change of the values and day-to-day activities of clinicians as they had managed to distance themselves from the impact of accounting (Jones & Dewing, 1997; Kurunmäki, Lapsley & Melia, 2003). On the other hand, doctors in Finland and New Zealand embraced the new accounting practices and used it in their daily work (Jacobs, 1998; Kurunmäki, Lapsley & Melia, 2003).

Blomgren (2003) discussed the changing behaviours of healthcare professionals due to the increased use of accounting from yet another angle. She questioned the assumption of seeing a profession as a homogeneous group, which seemed to have been taken for granted in previous research and argued that not only can there be conflicting groups or individuals within an organisation but also within one profession, and perhaps even for the same individual: *“The segments of the profession should consequently not be seen as fixed, but rather dependent on constant negotiations and interactions with surrounding groups.”* (Blomgren, 2003, p. 50). Thus, in her study, the enhanced focus on accountability was regarded as both positive and negative by the nursing profession; which viewpoint a specific nurse had was largely driven by the position held. For example, a head nurse possessing an administrative role already before the introduction of reforms got increased tools for operating control under NPM, while front line nurses were less affected as they rather continued to concern for quality and integrity of their caring work. Blomgren’s (2003) suggestion of not seeing professions as a homogeneous group together with opposing results on why some professions embrace the use of accounting information while others do not, indicates that focusing research on professional roles may not fully explain the observed attitudes and behaviours following the increased presence of accounting information in the healthcare setting. Kraus’ (2012) results also indicate this as he showed that the use of accounting differed depending on whether home helpers performed tasks in either the intra- or inter-organisational field. Thus, as it seems like behaviours and uses of accounting may differ even within one professional group, the next section will continue to investigate this and present research that discussed other important aspects than the professional role when investigating the use of accounting in a healthcare setting.

2.1.4. Discussing uses of accounting beyond the perspective of professional groups

Jackson et al.’s (2014) study focused specifically on the prescribing situation and further investigated the effects on medical prescribing practices from the introduction of cost constraints via cash limits. Even though the authors did this by using the sociology of professions, given the

size and complexity of healthcare organisations they suggested that it becomes important to study a specific situation, such as prescribing, as uses of accounting in different situations or tasks can vary. The authors found that the cost constraints created tensions not between the administrative- and medical logic but between the senior- and junior medical roles. All interviewees showed familiarity to the implications of accounting on prescribing practices but still a majority saw this as an intrusion to their professional identity. Even though many of the clinicians raised problems with the introduction of the emphasis on financial issues into the prescribing practices, they were all aware of that this had an impact on their decision-making. This could be seen through the way the clinicians developed ways that enabled them to put tougher constraints on some decision situations and be able to practice their medical autonomy in others. Firstly, cost savings were pushed to non-clinical or non-patient services. Secondly, in less complex cases or in non-life-threatening cases, doctors prescribed the cheaper form of treatment even if it was not considered to be the best one and hence cost aspects got an increased emphasis for the decision-making. Thirdly, senior clinicians imposed pressure on junior clinicians to comply with cost constraints, resulting in that seniors were able to secure their medical freedom in clinical decision-making. The authors argued that the clinicians' operational space came under compromise due to the new cost- and budgetary controls: "[...] *the doctors began to selectively identify sites where they were willing to surrender professional autonomy and to some extent medical jurisdiction.*" (Jackson et al., 2014, p. 424). Even though not explicitly stated by the authors, their results showed that doctors used more or less accounting information depending on whether it could be justified in the situation, implying that discussing what task or situation accounting is used for is of interest.

Furthermore, Coombs' (1987) study also noted differences in the use of accounting information depending on the situation in which the decision was made. His results for example showed somewhat inconsistencies in doctors' use of accounting. As discussed above, during the same interview one doctor first expressed a need for cost information when optimising resource allocations and later discussed another situation where decisions for resource allocations were not something that could be made but rather emerged from practice. Though as Coombs (1980) pointed out, this does not necessarily mean inconsistency but rather it could be the fact that two different decision-making systems were used for different contexts; rational (accounting) decision-making was used if considered appropriate and if not, doctors used their professional knowledge without regarding the cost of the procedure.

Moreover, when Doolin (1999) studied the introduction of a casemix system, even though the main part of his article focuses on power effects between different professional groups and clinicians' strong opposition toward accounting information, the study discusses this from a perspective of different tasks. Contrary to previous presented articles, Doolin (1999) did not look undifferentiated on the effects of accounting on attitudes and behaviours in his study but rather, even if not explicitly stated, specified specific situations where accounting was used and acknowledged differences within these. The accounting information from the new system created protocols that were intended to enable standardisation of treatment and achieve cost efficient practices, but instead observations showed that clinicians used it to support arguments for more resources. Hence, the study indicated that whether clinicians' opposed accounting information or not depended on in which situation it was used, and clinicians even found new situations in which they felt comfortable to use accounting information. Doolin (1999) concluded his study by suggesting how this kind of control mechanism, where boundaries surrounding the treatment decision controls clinicians, is a more subtle way of exercising control, but that it also can lead to unintended uses as creating a tool used to argue for more resources.

Thus, investigating these articles it seems like the previous focus on the medical profession is not of key essence when discussing the use of accounting information, but instead it seems like different decision-making situations may induce different uses of accounting. As the presented literature has focused their analyses more on the professional roles, we have hereafter examined the empirical findings to understand what specific situations accounting information may be used for decision-making.

2.1.5. Finding more specific situations where accounting information can be used for decision-making

Blomgren (2003) indicated that nurses changed their decision-making mind-set due to the introduction of profit centres at the case hospital. The introduced accounting control system was argued by Blomgren (2003) to make the nurses realise their responsibility for their own clinic and the causality between actions taken and receiving money. One example was how the nurses in her study started to consider costs when deciding what medicine to give but also tried to shorten the time for patients staying at the hospitals, even if this sometimes was against the before so rooted thinking of having the patient's best interest in focus. This implies that a situation where accounting may be used in the operations is in the treatment choice, meaning decisions made regarding a patient's treatment. Another study where we also saw indications of a use of

accounting in the treatment choice was in Jacobs' (1998) study, where he found that medical professionals saw accounting systems as a part of their education and a form of peer pressure within the studied GP practices. In meetings, doctors were now able to discuss accounting information and share knowledge such as prescribing practices and usage of specific drugs, enabling them to make cost efficient decisions about treatment choices. Further, previously pharmaceutical companies had been the only one providing information about pharmaceuticals to doctors, but by introducing this new independent source of information, doctors were able to make more substantiated decisions. Another example of cost efficient decisions in the treatment situation was the use of laboratory tests where doctors became especially costs conscious and only ordered the tests if it was really necessary to do so. Llewellyn's (1998) study focused on another form of care, namely social services, where social workers showed resistant attitudes towards the use of cost information in care activities. However, two years later, interviewees showed that cost information did affect caring tasks. Llewellyn (1998) explained this effect by pointing to observations in how the mind-set of the social workers had changed. Social workers were forced to co-operate and participate in discussions with colleagues to comply with financial limits and not only fight for their own clients to get the best care, so that all clients received care at all. All these examples thus show that the treatment choice, or caring choice in the context of social care, is a situation where accounting information can be used in decision-making.

Kraus (2012) and Carlsson-Wall et al. (2015) both studied the work of home helpers and pointed out how these were forced to decide how scarce resources, in this case time, could be managed most efficiently. The home helpers used the contract as a guiding tool meaning that the accounting controls had a major role for decisions on what tasks to perform, even though this meant that the service outcome was perceived poorer for the pensioners. Hence, this implies yet another situation in which accounting information is used for operational decision-making, namely when resources are managed in different ways to achieve operational efficiency. Similarly, in Kurunmäki's (1999) study, which interest rather lies in the power struggles between the diverse roles of individuals and institutions, the empirics arguably show indications of how an economic mind-set was adopted by clinicians when making decisions for operational management of resources. She observed that the arguments seen as most convincing at the hospital were the ones based on economic rationality which for instance was exemplified with a chief physician explaining how an increasing number of patients in each cure room would immensely affect the labour costs for treating those patients with about 40 %. Several other arguments were also supported by calculations, as for example when deciding whether to close

down a temporary ward that had been set up to deal with rapidly increased demand. In addition, Lehtonen (2007) similar to Doolin (1999) studied the introduction of a casemix system. His results showed how the introduced information made clinicians more cost conscious and that it was used for example when standardising the supplies of both inventory and services enabling the treatment situation. All these studies show how accounting information is used to make decisions for how to operationally manage available resources.

In the same study by Kurunmäki (1999), discussed above, the change in resource allocation system within Finnish Healthcare was argued to influence the economic reasoning of clinicians in: “...*argumentation used, the decisions made, and the actions taken by health professionals.*” (Kurunmäki, 1999, p. 122) when deciding on how to allocate resources. Calculations showing financial effects were especially important when deciding on new investments. Then the clinic had to assess the number of examinations used by the investment, the depreciation time as well as calculate the price per examination in order to justify their investment need. This points to uses of accounting information when making strategic decision on how to allocate resources, in this case for new investments, to a clinic. Similarly, as discussed above, Doolin (1999) showed that clinicians used accounting information from the casemix system when deciding and negotiating for how resources should be allocated at the clinic. Hence, this exemplifies the third potential situation where accounting information is used to make decisions for strategic allocations of resources both to and within a clinic. Thus, three different situations have been identified where the use of accounting seem to be prevalent for decision-making. These are summarised and presented in the table below:

Situations when accounting information is used for operational decision-making		
Treatment choice	Operational resource management	Strategic resource allocation
Shorten the time for patients staying at the ward (Blomgren, 2003)	Staff dividing their time between clients (Kraus, 2012; Carlsson-Wall et al., 2014)	Calculating price per examinations and appreciating depreciation time to justify investment needs (Kurunmäki, 1999)
Accounting information used as peer pressure to make treatment choices more efficient (Jacobs, 1998)	Presenting cost saving from decreasing number of patients per cure room (Kurunmäki, 1999)	Clinicians using casemix information when allocating resources (Doolin, 1999)
Considering costs in caring tasks so that more clients can receive care at all (Llewellyn, 1998)	Standardisation of inventory and services enabling the treatment situation (Lehtonen, 2007)	

2.2. A framework on accounting's role in organisational decision-making

2.2.1. Different roles of accounting in decision-making – presenting the framework

In Burchell et al.'s article from 1980, they investigated the roles of accounting in organisational practice. They pointed out that many researchers have given suggestions for what role accounting systems can and should play in organisational decision-making, but few has studied it critically. They mean that: *“The link has, in other words, been presumed rather than described... [and] ...that the roles played by accounting systems in decision-making can be invariate across a multitude of different decision situations...”* (Burchell et al.,

1980, p. 13). The authors based their analysis on the decision-making framework outlined by Thompson and Tuden (1959) which characterised different

		Uncertainty of objectives	
		Low	High
Uncertainty of cause and effect	Low	Decision by computation	Decision by compromise
	High	Decision by judgement	Decision by inspiration

Figure 1: Decision-making framework developed by Thompson & Tuden (1959)

decision-making situations and ways to handle them. The model, presented in figure 1, shows how agreed actions are affected by uncertainty of objectives and cause and effect. Burchell et al. (1980) claimed that this rather simple model could be used in enhancing the understanding for how accounting is used in practice, i.e. the role of accounting in practice.

The authors thus started with this model, and then used it to analyse the specific roles of accounting in decision-making with the help of a “machine” analogy. When uncertainty of both the consequences of action (causality) and objectives are low, rules, formulas or algorithms can for example be used to solve computational problems. The authors resembled this with accounting being used as an “answer machine”. When uncertainty of causality increases, decision-makers need to further explore and analyse different alternatives. To solve for this increased uncertainty, the authors argued that there have been multiple extensions to the “answering machines” so that accounting systems more or less absorb the increased uncertainty, for example optimising models or risk analysis. Accounting systems are in these cases more used as assistance or support for decision-making. The authors termed this situation as “learning machine” and related it to accounting functions such as “what-if” models or sensitivity analysis. When instead the uncertainty over objectives increases, the political processes became more important. Burchell et al. saw this as accounting being used as an “ammunition machine”

meaning that participants are trying to get their own ideas through. This can be done through the use of control systems which “...selectively channel the distribution of information...” (Burchell et al., 1980, p. 15). At last, when decision-making according to Thompson and Tuden (1959) is more of “inspiration”,

and uncertainty of both objectives and causality is high, organisations may experience a need for accounting systems

serving

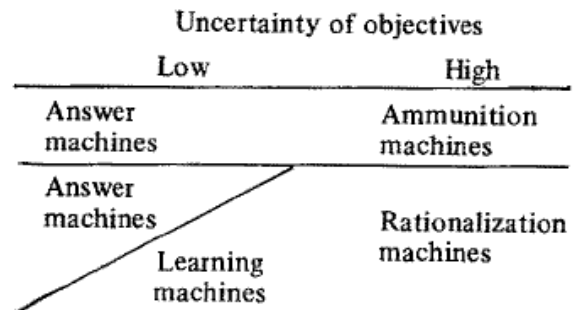
as **Figure 2:** The decision-making framework presented by Burchell et al. (1980)

“rationalisation

machines”. Burchell et al. (1980) claimed that this is the case when trying to legitimise decisions that have already been made, and then accounting systems works well in showing historical outcomes to support or reject certain actions. The framework is illustrated in figure 2.

As said, the computational practices are increasingly intervening with the judgmental practices for decision-making. Burchell et al. (1980) argued that there are two factors underlying this; “*The first stems from the increasing formalisation and objectification of management knowledge and the second from the growing extent to which accounting practices have become implicated in the development of new and more complex forms of organisational segmentation and management.*” (Burchell et al., 1980, p. 15) Standardisation of decision-making was sought which included the development of multiple tools as formulas and rules. These had often also included accounting and financial calculation. More and more of the risks and uncertainties that were before up for management’s judgement were now being quantified, hence making decision-making more of a computational form.

Burchell et al. (1980) meant that conflicts and disputes regarding the direction and organisational means can arise in multiple organisational discussions. As organisations consist of individuals with different interests, political processes can be seen as inherently in their existence. Budgeting, planning and reporting can be used as means to give transparency and measurability for common interests and tasks. They claimed that accounting is not solely used for bases for decisions but the control systems can also influence how other information is reviewed, organised and evaluated. Also, accounting is not solely used in preceding decisions, but there are as well cases when



already made decisions need to be legitimised, justified and rationalised; “...a need for retrospective understanding of the emergence of action...” (Burchell et al., 1980, p. 18). But even though accounting has come to play an important factor in organisations’ operations, they are still just a factor and not the only influencing factor. The roles of accounting will evolve and be shaped by the environment in which it is present.

2.2.2. Previous studies’ application of the framework

The framework developed by Burchell et al. (1980) to understand the role of accounting in decision-making is frequently referred to in the accounting research field within public sector organisations (see e.g. Ansari & Euske, 1987; Coombs, 1987; Richardson, 1987; Mouritsen, 1994; Abernethy & Brownell, 1999; Lowe, 2000; Kurunmäki, Lapsley & Melia, 2003). Ansari & Euske (1987) studied a defence organisation and took on a holistic approach to the role of accounting. They presented two somewhat adjusted dimensions to illustrate the different uses of accounting. Instead of focusing the analysis on the level of uncertainty of cause and effect, as Burchell et al. (1980) did, they used the dimension location of the user group which depicted an internal-external dichotomy: “*That is, whether the primary role of information is to record internal activities for use within the organisation, or whether it is to mediate the relationship between an organisation and its environment.*” (Ansari & Euske, 1987, p. 551). Secondly, a dimension of organisational process, divided into a technical-rational and natural perspective, was used instead of uncertainty about objectives. A rational use is exemplified with using simulations as “what if” analysis along with data for capital budgeting; accounting information being used as an answer- or learning machine. A more common use observed by Ansari & Euske (1987) on the other hand implied the provision of information to legitimise choices or to justify actions as an ammunition machine. Henri (2006) on the other hand used the framework developed by Burchell et al. (1980) in yet another way and used it to analyse how a firm’s culture influence its use of control systems. He concluded that when the culture is recognised to be of a flexible dominant type, performance management systems are used to focus attention (ammunition machine), support strategic decision-making (learning machine) and legitimise actions (rationalisation machine).

In accounting research on healthcare organisations, the most commonly referred machine from Burchell et al. (1980) is the rationalisation machine and several researchers discussing the use of accounting as legitimising operations rather than to shape them refer this to the this machine (Richardson, 1987; Covaleski & Dirsmith, 1988; Lapsley, 1994; Kurunmäki, Lapsley & Melia,

2003). For example, Kurunmäki, Lapsley & Melia (2003) discussed how the observation of clinicians in the UK to not use accounting in their daily, or core, activities showed an example of accounting being used as a legitimating device for made decisions rather than to enable or facilitating decisions for clinicians. She discussed a situation where an accountant saw that the clinic was about to overspend but as the responsible clinicians argued that it was not realistic practically or medically to reduce services, the accountant just kept track of budgets and records instead of actively letting accounting influence decision-making by for example shutting down a unit. Thus, accounting was in this example, according to Kurunmäki, Lapsley & Melia (2003), used as a rationalisation machine as the accountants just kept track of financial outcomes so that it could be explained and justified in hindsight. Abernethy and Brownell (1999) took a somewhat different approach when studying the role of the budget in public hospitals and investigated the relationship between strategic change, style of budget use and performance. Instead of using the suggested rationalisation machine in cases of both high uncertainties for causality and objectives, they rather said that in these cases the budget was used as an ‘idea creation’ machine which they characterised with accounting being used interactively (Simons, 2013) when an organisation experienced strategic change. Thus, this shows another interpretation of Burchell et al.’s (1980) rationalisation machine where it is not just used to legitimise actions but also to in hindsight discuss and understand this information to develop new ideas. Another machine found in the healthcare setting was discussed in Coombs’ (1987) study which on the other hand proposed that accounting was not being used for rationalising decisions but rather *“as an attempt to create information which can fuel debate on uncertain objectives”* (Coombs, 1987, p. 392), hence being used as an ammunition machine. He meant that there is a risk of increasing the rate of uncertainty rather than solving for them when introducing accounting as a computational task (answer machine) to new areas such as the healthcare sector.

Evidently, the framework presented by Burchell et al. (1980) discussing accounting’s role in decision-making is widely known and commonly referred to in the accounting research stream. However, it has not yet been positioned in the frame of a clinic setting nor used as the main framework to analyse the different roles accounting may have in a case study. Our aim is thus to use this framework to enhance the knowledge of accounting’s role in decision-making within a clinic setting, close to the core of operations. The framework presented above is ideal for this task as it can be used as a tool in analysing how needs of accounting information can arise from different characteristics of a decision-making situation.

2.3. Going forward: Gaps in the existing literature aimed to be filled with this thesis

This literature review has presented previous research within accounting in healthcare organisations and discussed: the introduction of NPM reforms, attitudes and behaviours towards accounting information of professionals working within the health- or social care setting, as well as presented different situations in which accounting seems to play a central role for operative decision-making in healthcare organisations. Following this, a well-established decision-making framework in accounting literature has been presented, discussing different roles of accounting. Having done this, we have found several gaps in the existing literature which we aim to fill with this thesis, and these will be discussed below.

Firstly, a long time since the first NPM reforms were implemented has passed and clinicians have since then experienced several modifications of the reforms, enhancing their exposure to accounting information. Thus, it becomes increasingly difficult to believe that clinicians have not adopted an economic mind-set and therefore also challenging to have an analytical starting point where economic concepts are assumed to be new for clinicians, which many of the previous articles seem to have. Furthermore, there has been little research on the role of accounting in more recent years. Perhaps accounting information is inducing different attitudes and behaviours today than previously observed. Irrespective if this is the case, the fact that NPM has been a part of the public sector for several decades and that less research has been carried out in recent years makes the role of accounting in a contemporary healthcare setting an interesting field of research.

Secondly, previous research has had a strong focus on different professional roles' and how their characteristics affect the use of accounting within the healthcare setting (e.g. Coombs, 1987; Jacobs, 1995; Jones & Dewing, 1997) sometimes even assuming it to be a homogeneous group (Kurunmäki, 2004; Jacobs, 2005). Thus, most researchers possess an undifferentiated view when discussing the use of accounting (e.g. Jones & Dewing, 1997; Kurunmäki, 1999; Jacobs, 2005), meaning that they have not studied nor discussed the implications of the fact that accounting arguably may be used differently in different situations. However, as it has been argued throughout the literature review, it seems as if having this strong focus on professional roles may not fully provide an understanding of the role of accounting in a healthcare setting. Indications in previous research show that it might not be a question of whom but rather in what situations accounting information is used (Coombs, 1987; Doolin, 1999; Jackson et al., 2014). Thus, we aim to extend the knowledge of the use of accounting within healthcare by deviating somewhat

from this previous research stream and have a more differentiated view on the use of accounting; rather discussing in what situations, or for what tasks, and how accounting information is used. Moreover, as an examination of previous research has shown three potential situations where accounting information is used for decision-making, it becomes interesting to further develop this reasoning by discussing how accounting is used in these situations. Abernethy et al. (2007) also point out that field based research within clinical units investigating the role of accounting in different contexts is a somewhat neglected research field, thus, this study will aim to fill this gap by studying the use of accounting in different decision-making situations at a hospital clinic.

Thirdly, the decision-making framework presented by Burchell et al. (1980) will be used to more thoroughly study the use of accounting in the clinic setting. By using this framework in analysing decision-making in the context of healthcare where it is not given that financial and accounting aspects possess the same role as in for example market based organisations, we aim to broaden the existing knowledge of accounting's role in decision-making. The machine analogy has been frequently referred to in previous research but to a lesser extent used as a theoretical framework, hence using Burchell et al.'s

(1980) theory to more deeply understand the different uses of accounting at a hospital clinic would be a somewhat new approach. The Burchell et al. (1980) framework has also been combined with the three decision-making situations derived in the literature review, which will be used

		When accounting is used		
		Treatment choice	Resource management	Resource allocation
How accounting is used	Answer machine			
	Learning machine			
	Ammunition machine			
	Rationalisation machine			

Figure 3: The framework, an adjusted form of Burchell et al.'s (1980) framework, used in the analysis of this paper

to structure the analysis of the finding from the case study (see figure 3). Thus, with this literature review as a basis together with the conceptual framework we have defined our research question, which we by answering aim to fill the above discussed gaps:

How is accounting information used in operational decision-making at a hospital clinic?

A particular interest when trying to answer this research question will be to understand the specific situations where accounting is used to support decision-making, rather than assuming the use of accounting to be equal across different activities at the clinic. As the case setting is within an area where medical or ethical considerations could potentially be viewed as clashing with more rational accounting ones, we will also discuss this, perhaps, inherent tension and how the clinicians manage it. This is especially interesting as we, compared to previous research, question whether it is actually different professional groups that resist or absorb accounting logic in today's contemporary setting; in other words, how this tension can be explained when a discussion of professional roles may not.

3. Methodology

In section 3.1. we will start to present how we have chosen to design the study and discuss pros and cons with this choice. Here we will also give an introduction to, and argue for our choice of case organisation. Thereafter, a presentation of the approach to collecting (in section 3.2.), structuring and analysing (section 3.3.) the data will be outlined. We end the chapter in section 3.4. by discussing the quality of the data, meaning the ability of other researchers to replicate the study and whether the intended results are achieved.

3.1. Choosing research design

Empirical method - a single qualitative case study

To establish knowledge of the nature of accounting practices in the clinic setting and seek to understand *how* accounting information is used for specific situations, a single qualitative case study approach was considered to be suitable. The case study is an appropriate method to use in our case as we aim to develop an in-depth understanding of the phenomena (Merriam, 1994; Shaw, 1999; Maxwell, 2012; Silverman, 2013; Yin, 2014) and seek to question the established view of the use of accounting controls within our context and perhaps present new theoretical relationships. Qualitative researchers take on a process theory for understanding the world meaning that focus lies on: “...*people, situations, events, and the processes that connect these; explanation is based on an analysis of how some situations and events influence others.*” (Maxwell, 2012, p. 29). This makes it possible to understand underlying phenomenon and test for the construct or generalisability of theoretical propositions rather than presenting frequencies or statistical generalisability (Silverman, 2013). The literature review thus becomes a very important component for the qualitative research as the study, for example, aims to test for previously stated results.

The single case study was chosen in favour of the multiple case study as the latter requires a trade-off to be made with an in-depth understanding of a particular social setting (Dyer & Wilkins, 1991), even though a multiple case study could give us comparative insights and therefore be argued to provide more generalizable results (Eisenhardt, 1989). Also, Dyer & Wilkins (1991) argued that single case studies have historically shown that they provide better stories meaning they describe the “...*general phenomena so well that others have little difficulty seeing the same phenomena in their own experience and research. We return to the classics because they are good stories...*” (Dyer & Wilkins, 1991, p. 617). Through the in-depth

knowledge obtained with qualitative field studies one can “...*explore reasons for particular accounting practices.*” (Scapens, 1990, p. 7) which is further the aim with this study. Not only was our attempt to explore reasons for why accounting is practiced in a specific way, but we also aimed to further explain the reasons for the observations made. Instead of trying to see patterns in the case that could be hypothesised and tested for in future studies, the researcher should look for patterns to explain the specific case studied which can be part of a theory development process. While aiming for theoretical generalisability one should further try to explain “...management accounting practice and help both managers and accountants to work out their problems on a day-to-day basis.” (Scapens, 1990, p. 278). The case studies will then not present optimal solutions but rather raise an awareness of the problem and exemplify potential ways to solve for these. Rather than solving for the problems, case studies give people ideas in how problems can be addressed. Thus, in this study, a combination of an exploratory- and an explanatory approach was used in order to both deepen the knowledge for one specific case and raise awareness of the phenomenon studied.

Research approach - systematic combining

There are two main approaches for combining previous literature to the empirical findings of a case study. One is the inductive approach meaning that the researcher chooses the case to study in advance and develop the theoretical framework used to analyse the collected material retrospectively; the empirical data has a central role for steering the analysis. Conversely, in a deductive approach the theoretical framework is developed before the empirical findings have been collected and thus in this case, the framework and hence previous research will affect the data collection phase (Troost, 2014). Instead of using either of such standardised approaches, Dubois & Gadde (2002) argued for what they call systematic combining, also referred to as an abductive approach, through which the

researcher’s understanding of both theory and empirics can be strengthened. Starting by a preliminary theoretical framework to guide the design of the study and then iteratively working

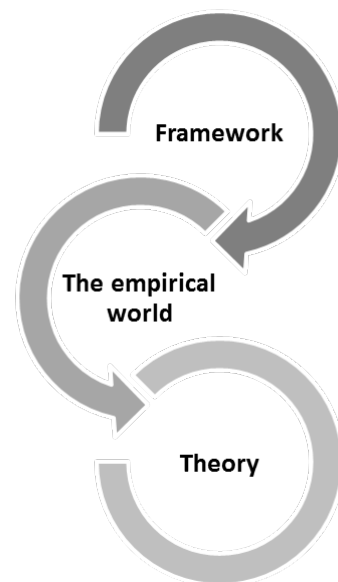


Figure 4: Illustration of systematic combining, an iterative process

between the different phases of research writing (visualised in figure 4) enables retrieved knowledge from later parts of the study to be considered, which can in the end improve the end results. Thus, empirical findings from the first interviews are taken into consideration to adapt the theories and framework as well as the further data collection by for example adjusting research questions. The research structure and aim can thus be said to evolve over the process which enhances an exploratory approach. The framework by Burchell et al. (1980) was found early in the process but was not put emphasis on as it was just one of several frameworks considered. We though stress that this theoretical framework in the beginning gave more of an indication of where the case could head, rather than letting it colour the entire structure of the process. While the work progressed, we realised the strength of the suggested framework and used the empirics and previous literature to adjust it. It was not until we collected the empirical data that we could strongly see the ability of the framework for our setting. Hence, the research approach was iterative and followed a systematic combining concept (Dubois & Gadde, 2002) in so that it evolved during the process of the thesis rather than followed a pre-set structure from the beginning.

Selection of case organisation

Sampling is the term used when talking about who or what to include in the data collection. The term becomes problematic for qualitative studies as it refers to a process of choosing a representative selection of the population that one aims to draw generalizable conclusions from (Maxwell, 2012). Instead of this, what Maxwell calls probability sampling, another approach is presented, namely the purposeful selection: *“In this strategy, particular settings, persons, or activities are selected deliberately to provide information that is particularly relevant to your questions and goals...”* (Maxwell, 2012, p. 97). In this way, the purposeful selection, as inherent in the name itself, enables the researchers to collect data with people in situations that are appropriate and likely to provide deepened knowledge to the subject of interest. In this sense, the selection of the case to study becomes increasingly important as it is not only about being able to withdraw a random sample as is the case within the quantitative method.

The ophthalmology clinic, Specs, that is the specific focus for our study caught our interest as it is placed in a Swedish county that has recently introduced care choice reforms for different parts of the specialised medical care that the clinic offers. Care choice means that the patient can choose which clinic to go to, privately or publicly driven, and without needing a referral. The introduction of this has also led to changes in how clinics are funded by the county; from the

previously set budget to a predetermined funding for each patient treated. Some medical care within the field is still regarded to be highly specialised and hence separated from the care choice. In the county, there are only three hospital clinics which are assigned to provide such highly specialised care, where Specs is the largest of them, accounting for 80% of the total highly specialised care in the county. This means that Specs has a rather special mission that is their priority when planning operations. Economically the clinic is divided into three business lines according to the type of funding; Care choice 1, Care choice 2 and Highly specialised care (see figure 5).

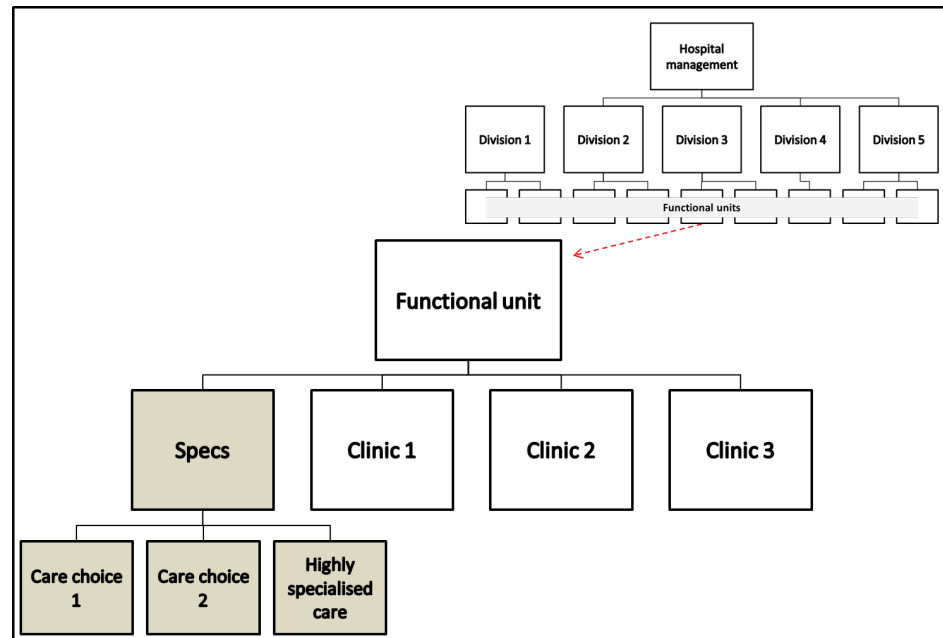


Figure 5: Illustration of the division of business lines within Specs

A further interesting aspect that made Specs a good case to study was the situation surrounding some especially expensive pharmaceuticals, Lucentis, Eylea and Avastin, where discussions have been quite intense. Ophthalmology has historically been a medical area without any particularly expensive pharmaceuticals, with the main cost being, and still is, personnel. However, since 2007 a new resource intensive and expensive pharmaceutical, Lucentis, has been available in the market for a condition causing blindness which until then was not possible to prevent. In 2012, another slightly similar pharmaceutical, Eylea, was introduced. Though, Eylea was priced at the same level and had the same treatment pattern, meaning that it did not cause any drastic financial implications. During 2011 and onwards yet another pharmaceutical, Avastin, originally used for cancer treatment, was tested for the same disease and showed similar results as Lucentis. Avastin has not yet been officially approved to be used for the eye; however several counties have decided to use it anyway due to its much lower cost. Since the introduction of these pharmaceuticals, there have been discussions both publicly and within the clinic for which one to apply. We were tempted to specifically focus on the prescription of these three pharmaceuticals and study how decisions were affected by accounting information, but as the cost liability was

moved from the clinic to a county level, the clinic had no specific measures to control the use of these, thus the study would not have proved very interesting. Also, many of the increased indications that the pharmaceuticals had received during the years were not as revolutionary as initially thought since the clinic had actually already started to use them for these indications. Therefore, we chose to broaden the scope and look at different decision-making situations at the clinic and hence took on a more exploratory approach to see in what kind of situations and how accounting is used for decision-making.

In recent years, Specs has easily met its budget mainly because of shortage in personnel. Having several vacancies for a longer period of time, has originated from turbulent re-organisations causing dissatisfied personnel, but also from a general scarcity of ophthalmology professionals. The clinic has further suffered from substantial queues and falling behind in important administrative tasks such as journal writing for example. However this has now started to change, with shortening queues, administrators now being in phase and vacancies being filled. These reorganisations and changes in working routines is argued to have a positive impact for our data collection phase as it facilitates our aim of getting a deepened understanding of the phenomenon as these changes has forced the people at the clinic to consider their way of thinking and specifically how they make decisions. In organisations that have not been subject for change, the basic assumptions are rooted and unquestioned making it more difficult for an interviewer to receive answers of underlying ways of thinking.

3.2. Collecting the data

During four days, first two days in the beginning and then two days in end of February, we visited the case organisation to conduct our case study. After these two visits, some further interviews with people that was not available during our visits were carried through as well as some follow up interviews with people we already had met to clarify or deepen previous discussions in specific areas. Hence, the empirical data consist primarily of interviews performed in a semi-structured way with inspiration from the article by Kreiner & Mouritsen (2005). Kreiner & Mouritsen (2005) suggested an interview practice they call the analytical interview in which the interview is a collaborative effort between the interviewer and the interviewees. The interview process is thus for both parties to create new knowledges of existing phenomena. To be able to do this, the most important struggle for the interviewers is not the questions in the interview guide per se, but the follow up questions in which they for example can define

dilemmas that challenge the view or thought of the interviewee. Because, Kreiner & Mouritsen (2005) claimed that what the interviewee says is not always the correct truth: *“The aim is not to provide final answers but to give input to the analytical conversation.”* (Kreiner & Mouritsen, 2005, p. 155). This is for example due to that people tend to create routines making them unaware of underlying tensions of certain activities, tacit knowledge of their own practices, and a lack of knowledge between links to other parts of the organisation. These factors all threaten to affect the validity of the results which will be further elaborated below. To solve for this, we used a semi-structured approach where we were not forced to strictly follow the interview guide but instead allowed to put in follow up questions in order to elaborate upon especially interesting parts and create new knowledge. It should however be noted that as the analytical interview is dependent on the participation of the interviewee there is a larger risk of non-participation and incapability which would in the end harm the validity. Even though it could at times be a struggle to involve the respondents, we were able to get the interaction needed to both enhance our own and the interviewees’ knowledge. This was partly thanks to the fact that both co-authors were always present during the interviews where one was steering the interview while the other could pay more attention to acknowledging areas to build further on (Eisenhardt, 1989). This was a suitable course of action as it enabled us to explore and learn in the communication with the interviewees: *“When interviews fail it is rarely because the interview guide is violated, but because it is not violated!”* (Kreiner & Mouritsen, 2005, p. 158). The emphasis on the follow-up questions is a challenging but highly rewarding part of the analytical interview as it is with these that new knowledge is created. Also, when the interviewee’s conceptual way of thinking is challenged, they can provide new knowledge to themselves as well. This requires the interviewer not to be strained by the interview guide and be able to listen in order to come up with good follow-up questions. As hypothesised before-hand and also demonstrated during the interviews, clinicians may be unwilling to admit that financial information affect their work, we see the analytical interview as a good approach to use in our case as it enabled us to challenge existing practices and ideas.

The primary part of the empirics is based on 26 semi-structured interviews, all lasting 30-90 minutes, with 20 different people working at the clinic, and one responsible at a regional level for pharmaceutical control to gain additional insight to the process of pharmaceutical control. Interviewing different professionals at the clinic (managers, specialised doctors, ST doctors, medical secretaries and employees of the support functions) gave us a holistic view and a better understanding of all aspects of the operations as different roles interlink. Managers were

interviewed at all levels from the functional unit which Specs is part of; providing knowledge of the different responsibilities for each level as well as how decision-making is distributed between these.

In complement to the interviews, we received access to the budgets and Balanced Scorecard for the functional group and for the ophthalmology clinic specifically. For example, during one interview with one person from the management support team, we were introduced to the accounting system which visualised their way of working. We also received the internal website for one project executed in one specific area at the clinic which revealed meeting notes along with other information of the project. Another document we received was a report on the ongoing work with increasing the accessibility that is the major focus from the region at the moment. One document that we received and that we see as especially useful is the functional scheme which outlines the heavy complexity in planning the operations. All these secondary data was used both to increase our understanding of the clinic's operations and to find new areas of interest during the data collection phase. Also, the data enabled triangulation which was both to double check findings, but as Dubois & Gadde (2002) stated this is not the major issue in systematic combining, and to add new aspects to the problem researched.

3.3. Analysing the data

All interviews but one were recorded and transcribed in order to recapture important parts of the interviews as well as to make sure that the quotations were used correctly. After each interview we also discussed our findings and adapted coming interviews for potential new areas of interest. The majority of the interviews were executed in a face-to-face setting as it enables the observations of body language which can both be critical for understanding and useful for the analysis (Bryman & Bell, 2007). Due to locations constraints some interviews were though performed via telephone. We visited the clinic during two separate periods with about two weeks in between which enabled us to, after the first eight interviews, think through the material, adapt the interview guide and prepare for the coming interviews. Five follow-up interviews were completed as we after going through and discussing our material from the first interviews, realised that we needed some clarifications and further explaining of specific areas. In total, five follow-up interviews were executed and three of these took place when we returned to the clinic for our second round of interviews while the other two were performed via telephone.

When analysing the data, we took inspiration from the analytical steps presented by Miles & Huberman (2014), which is a classic approach to analysing qualitative data. In the beginning of the interviews, data was more loosely divided into different themes but when more and more data was collected we made a more thorough division into the use of accounting between the questions “why”, “what”, “where” and “how”. Thereafter we sorted through the material to find highlights and patterns. By iteratively working through the previous literature, patterns of where accounting information was used started to emerge and specific situations were pinpointed to structure the analysis. Thereafter, we deepened the analysis to see how accounting was used in these specific situations.

3.4. Assuring the quality of the data

A frequent stated drawback with the qualitative research is its inability to derive statistical generalisability (Merriam, 1994), even though as said, this is not the aim with these kind of studies and hence even if discussed should not be seen as a decreasing factor of the quality. The discussion of reliability, meaning the replicability of the study, is another problematic topic when it comes to qualitative research. Even though researchers transcribe interviews, these transcriptions are commonly not available for the readers and in addition the case or “social” world under study is under constant change, making them reliant on the researcher’s depiction of the conversation (Silverman, 2013). Furthermore, the analytical interview (Kreiner & Mouritsen, 2005) approach used in this study which relies on the interaction between interviewer and interviewees and where the critical point lies in the follow-up questions, makes the discussion of reliability in terms of replicability somewhat misplaced. The validity on the other hand, can instead be translated from the common, quantitative view of achieving an objective truth, to the “...credibility of a description, conclusion, explanation, interpretation or other sort of account.” (Maxwell, 2012, p.122). To control for validity in this case, conceptualisation of threats affecting this parameter must be stated and addressed. For example, in our case study a specific concern was that we, during the interviews, experienced that interviewees had created certain expectations of us having a business school background. Interviewees thus seemed to have considered and prepared for what they believed that we wanted to hear, rather than being “free” and open-minded as we would like them to be. This is an issue of validity that Maxwell (2012) refer to as “reactivity” meaning the effect the researcher has on the interviewees. Having an understanding of how we affect the interviewees, increases the validity of the study and we therefore tried to make the interviewees to talk beyond what they wanted us to hear to how the topic was really

reflected in their everyday practice. Here the suggestions from the analytical interview (Kreiner & Mouritsen, 2005) was used in order to create a mutual learning and where the loosely use of interview guides and frequent use of follow-up questions made it possible for us to overcome this problem. This was also done through asking questions for concrete examples rather than asking for views and opinions as that risks conversations turning into speculations of what could or ought to be. The other issue of validity is the researcher bias (Maxwell, 2012). By using the iterative process where literature is investigated and data collected simultaneously, we argue that we as researchers were more open minded for the answers of interviewees as we did not have particular expectations of what they were going to say. Our later aim of going beyond the perspective of professional groups also made us more open for different kinds of roads where the interviewees could take us.

Triangulation is a common measure taken to achieve internal validity. By using multiple researchers, sources of information or methods, results can be confirmed by several sources (Merriam, 1994; Maxwell, 2012; Silverman, 2013). In this study, we have ensured internal validity through triangulation by using multiple methods; even if semi-structured interviews have been our primary methodological tool, additional documentations have been studied such as Balanced Scorecards, budgets and multiple internal documents of various kinds documenting discussions, tools and results on operational projects. We have also been able to observe some interviewees working in their respective computer systems; e.g. budgeting, financial systems, scheduling, to get an additional view of processes used in the observed case clinic. Several sources of information, i.e. different interviewees stating the same issue or phenomenon, has also been ensured by asking similar questions to both homogenous and heterogeneous professional groups and confirming the same results. This has been especially important when findings essential for the study's results have been discussed. Having follow-up interviews after some time had passed, to clarify certain findings, is another common measure taken to ensure internal validity (Merriam, 1994) and was also used in this study. Moreover, the empirics predominantly consist of quotations, providing evidence for what the analysis has been built on. Participants of the study have also been able to read these quotations and descriptions surrounding them, ensuring that findings have been correctly described and interpreted. This is yet another common method to achieve internal validity discussed by Merriam (1994).

4. Empirics

In this chapter we will in section 4.1. first give a brief introduction to the case organisation, Specs. Thereafter we present how accounting information is used in the decision-making situations identified in the literature review; treatment choice, operational resource management and strategic resource allocation. In section 4.2. observations show that the core of the clinic's operation, the treatment choice, is primarily affected by medical considerations as financial considerations and accounting information is only used in some specific cases to support decisions. In section 4.3. several examples illustrate how accounting is used in the operational management of resources, including both the distribution and the effective use of personnel, rooms, materials, devices and pharmaceuticals. The yet higher level of decision-making, strategic allocation of resources, is presented in section 4.4. In section 4.5. these findings are further summarised.

4.1. Overview of the case organisation

Specs is an ophthalmology clinic operating within a Swedish hospital. The hospital is a publicly owned organisation and the operations are primarily financed by taxes. Specs together with three other, medically unrelated, clinics make up one functional unit. This functional unit in turn is part of a division who answers to the hospital management (see figure 6). The functional unit has a management team consisting of a functional unit manager, a financial director, a business developer, and an HR director. This team possesses the overall responsibility for strategically leading the four clinics and support them within the areas of accounting, business development and HR. In addition to this, there is a separate clinic management leading the day-to-day operations for Specs, which is based on a “three legged leadership” consisting of three clinic managers, two responsible for the

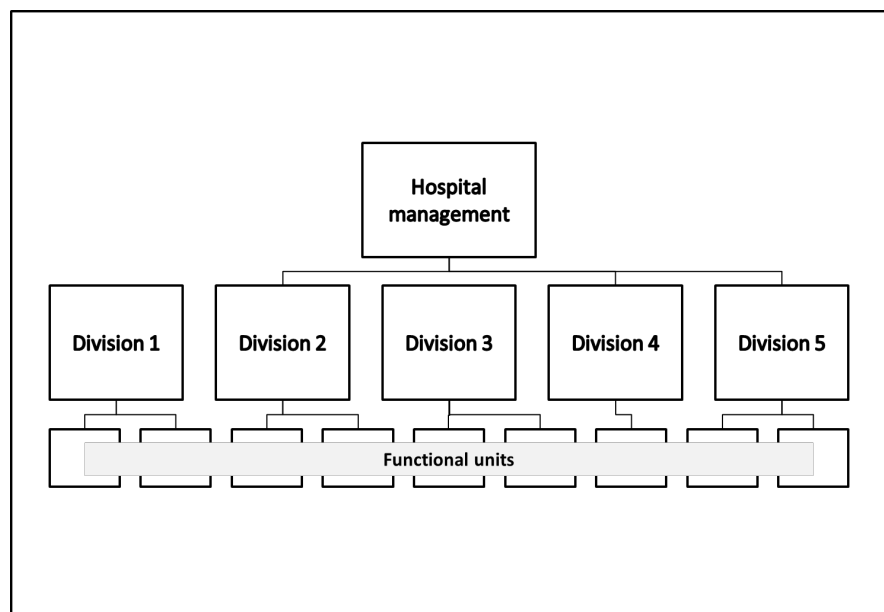


Figure 6: Organisation chart of the hospital

doctors (clinic manager 1 and 2) and one responsible for all other staff (clinic manager 3). Clinic manager 1 and 2 are both ophthalmology specialist doctors but the first works solely with administrative tasks and is medically responsible for the clinic while the other works 50 % as practicing doctor apart from the administrative tasks as manager. Clinic manager 3 is an educated nurse who has a fully administrative role and is responsible for the whole budget of the clinic except for costs associated with doctors. This division of budget- and medical responsibility makes decision-making for changes in operations a complex task. *"You have a medical responsibility on one leg, for which I can say that 'now we have to take care of queues' [...] but then one should look at the other leg, which is the nurses, and [there they say]: 'no, I do not think so, because no, we cannot hire, we do not want to hire.'"* (Clinic manager 1). Specs is further divided into six units, each run by one unit manager who both has personnel- and budget responsibility (see figure 7). Moreover, Specs is viewed as one clinic even though it is located in two different locations. Most activities are overlapping while some are separated to the different locations' receptions.

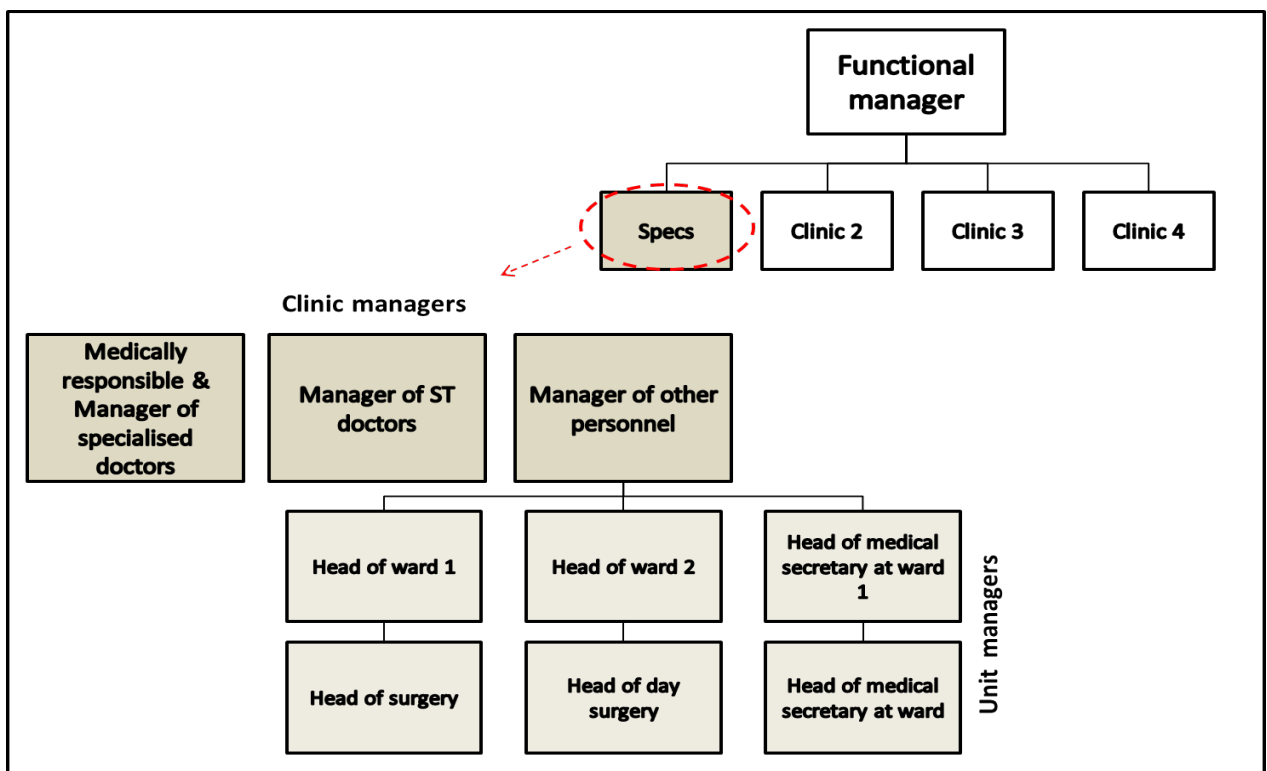


Figure 7: Overview of the different management levels at the clinic

Budget and Balanced Scorecard - the formal performance management systems

"Once the hospital receives the budget they get a sum, they do not specify that this you should use to x, this you use to y. They receive a budget, look at last year's outcome and then they divide it approximately as how it was divided the previous year. So if you need a profit or an efficiency requirement of 3 or 5%: 'okay, then we subtract that' and then some new technology, 'okay then we add that [to the budget]'. (Clinic manager 1)

The budget is given to the clinic from the hospital management, which in turn has received it from the regional management. The allocations within the budget are essentially based on historical appropriations with some room for smaller adjustments as for example to efficiency requirements or new activities. Due to this hierarchical top down procedure of budget preparation, the individual clinic has little impact on the development of their yearly budget. However, as will be discussed further down, when applying for additional resources to the clinic, a separate procedure is required where managers may have a larger impact. For the highly specialised care, the clinic gets the information presented for them and are then expected to comply within those set boundaries. For the care choice program (accredited business) they, on the other hand, make predictions of the assumed production. For example, if production is expected to increase, the unit managers can argue for the need of more personnel. That part of the budget is thus a bit different as the production always has to be covered by the income generated from treatments. Moreover, when the new budget is set and presented for the coming year, all managers with a budget responsibility at the different levels are informed of this and then has to approve that they consider their lot to be 'reasonable': *"Because the budget is handed over and then you should clearly answer the question whether it is a clear and reasonable budget. I always do this (show quotation marks and looks sceptical) for the reasonable question."* (Unit manager 2). The quotation highlights the difficulties in assessing the reasonableness of the budget as operations for the coming year can be difficult to predict since unexpected circumstances can cause drastic changes of outcomes. During the year, unit- and clinic managers follow the budget together with the functional unit's financial manager. If some costs peak or the financial manager alarms that the budget might be overrun the budget responsible manager together with the financial manager look at the deviation and try to understand the reason for this. Usually, deviations are due to costs having been registered in the wrong business line and in those cases, a simple technical adjustment is made. However, if a budget is overrun due to justified medical conditions they rather look at the deviation, explain it, and then accept it. This was exemplified when discussing controllability of the pharmaceutical part of the budget: *"Then I can see that it*

peaks there and what happens then is that I look at it and see: 'yeah this is damn expensive' but then I have to accept it because it is medically needed." (Clinic manager 1). This example shows how accounting information is rather used to understand and explain what have happened due to decisions already taken. Several interviewees highlight the importance that they can explain what have happened when budgets are overrun: *"Yes, then we try to explain what this overrun is due to."* (Member of functional unit's management team 2). Similarly, if the budget is overrun at year-end the clinic management together with the management team of the functional unit, have to present an action plan to return to financial balance. However, in practice, these actions are not always carried through as there might come up other things that need to be prioritised: *"In the next step, the clinic is then supposed to actually find measures for how to balance the budget. But in practice, these actions are not always executed. But you formulate these measures but then it can pop up other things that cost."* (Member of functional unit's management team 2)

The accounting control system has for a long time rested upon the budget alone, but for about three years ago a Balanced Scorecard was introduced as a tool to increase the ability to monitor operations. There are five perspectives within the scorecard: patient-, operational-, R&D-, employee- and financial perspective (see the summarised Balanced Scorecard for Specs for the year 2016 in Appendix 2). One goal within the operational perspective is to provide care in time, which is measured for example as the percentage of patients in queues that have waited over 60 days. The target, for patients to get care within these 60 days, is set to 80%. At Specs, one specific activity to achieve this has been to develop what they call functional schedules which is a way of making sure that all the resources, rooms and personnel, are used in an optimal way. Every year these goals are reviewed and potentially changed. Over the last years these goals have changed considerably from cost savings requirements to increasing production. At the moment, the focus is on improving accessibility and there is not the same desire to find cost savings: *"Now there is a focus on this with availability, so right now it's a little bit 'just go, produce more'. But it is not far back in time when it was: '10% [of costs] must go, find gaps, fix it!'"* (Unit manager 1). As the Balanced Scorecard is still a rather new tool at the clinic, targets are at the time only set on an overall level and used to guide focus of Specs activities: *"We work much accordingly to the balanced scorecard, which one could say we use as our guiding star here."* (Clinic manager 3)

It is the clinic- and unit managers that have responsibility for the budget, but rather than using it as a tool to steer operations this responsibility is more about keeping track of the different cost

items. The budget information is presented to the rest of the personnel, but it is not further elaborated upon or discussed: *"He [the clinic manager] showed some figures on how the different companies had resulted last year. [...] Yes, it gets a little confusing, I do not understand what it concretely means to us."* (Medical secretary 2). Hence, clinical personnel are aware of the budget and balanced scorecard, but they do not use these accounting control tools in their everyday activities.

4.2. Accounting's influence on treatment choice when medical knowledge does not provide a direct answer

"Interviewee: I don't care. I am not really interested in it. To be honest.

Interviewer: Why?

Interviewee: It doesn't really make any difference to me. I mean I see the patients, I treat them and that's it. It doesn't matter if it cost this or this much. I am just following the (guidelines)... It won't affect what I'm doing anyway." (ST doctor 1)

Decisions for how to treat a specific patient are in principal based purely on medical considerations. In interviews, doctors clearly state that they firstly are not in need of financial information and secondly are not interested in it. Treatment decisions are made by the qualified doctors who in most cases take decisions alone. The decision is not only based on previous knowledge from doctors' medical education or personal or colleagues' experience, but also from medical conferences attended and medical guidelines received from authorities or treatment programs that entail the whole region. However, financial information or guidelines is not something the doctors consider for these decisions:

"You have your patients booked on a particular day that you have to take care of no matter what. You are on that treadmill regardless. So you are not affected much by it [financial information] [...] you do not have much opportunity to influence it in the everyday work. Rather, you know that you should be cost-conscious with certain things and not do things if it is not necessary. But in the end it does not affect you much I would say." (ST doctor 2)

Clearly, there is a view among doctors that financial information does not, and perhaps should not impact the treatment decision. However, simultaneously, the quotation above indicates that there exist an understanding for accounting information. This is further emphasised when

discussing the scenario after a medical decision has been made, as doctors in those situations choose the financially most efficient alternative. A doctor illustrates this procedure when discussing the requesting of a specific type of analysis on mutations which can be done thoroughly through a very expensive analysis, but also through screening which is a cheaper procedure yet also somewhat simpler. In such cases, when medically justifiable, doctors primarily requests the cheaper screening and only in rare cases, when the cheaper screening do not provide any answers, the expensive analysis is requested: *"We have these mutation analyses for example, they are very expensive. But there we try to send them on a cheaper screening first, and only if that one does not give any answers, we do the expensive one."* (Specialist doctor 4). Moreover, in practice, as medical guidelines are developed for larger patient groups, there are cases that fall outside these boundaries and in those cases neither medical guidelines nor previous experience provide a clear answer to the outcome of a specific treatment. This uncertainty, regarding the medical implications and results that a treatment might lead to, allows for further considerations on financial aspects, for example whether to start a costly treatment that possess little evidence of the actual medical effect:

"It does [affect] indirectly, but one does not feel burdened by the financials. I mean, you have a certain number of patients and you have some undertakings to do. The guidelines put some limitations on how you should treat different patients, but that is based on scientific evidences. But it's when you're in the borderland, when it is not science, or enough science. Because the studies are designed in a certain way, and in such areas you don't know. There it may be considerations for and against whether it is reasonable to kick off a long-term treatment at a high cost on weak grounds, and then one gets to weigh in the risks for patients." (ST doctor 2)

Furthermore, the fairly similar and expensive pharmaceuticals, Lucentis and Eylea, together with the considerably cheaper off label product, Avastin, have created intense discussions for what should be considered a reasonable price for one specific treatment. However, in this discussion, the otherwise so clear position that financial considerations do not belong in the treatment choice is somewhat reversed and instead doctors use cost information to justify the use of these pharmaceuticals by stressing how the society will achieve economic benefits by using these expensive pharmaceuticals. Interviewees argued that the cost for supporting patients that becomes blind if not using these pharmaceuticals is higher than the cost of treating them: *"Then we talk about a lot of people who can actually manage themselves at home, who don't need help from 'the vision centre', who don't need extra help with food deliveries, domestic care services*

and all that stuff." (Clinic manager 1). As the change of cost liability for these pharmaceuticals enabled doctors to choose pharmaceutical solely based on medical considerations, independent of financial implications, accounting information was instead used to justify the use of them.

Another aspect of these pharmaceuticals is that research has shown that patients in the region where Specs' operates had been undertreated when it came to these diseases. A new procedure where treatments are given both more frequently and regularly was also recommended internationally, causing Specs to adjust their treatment practices accordingly. This was further enabled by the region's decision to change the cost liability from a clinic- to a county level. However, research does not show an optimal length and regularity of treatment, rather it shows that there are no negative consequences of giving too many injections, meaning that patients can practically be treated forever:

"Because on a pure medical basis, one can never say that it's wrong. That's the crux of the matter, that as a 'policymaker' or 'law maker', they think you can follow the medical guidelines like a recipe book: 'Yes, this one should be taken care of and this one shouldn't'. But if you look at medical data, then it's never wrong to give this type of regular treatment with the injections, twelve times a year." (Clinic manager 1)

Emphasis is also put on the fact that it is easier to decide for when to start a treatment than to discontinue a patient and that smaller clinics can find this even more troublesome as medical guidelines do not provide such information. Having the cost liability on county level and medical guidelines justifying a lifelong treatment could thus have led to more and more patients being treated at Specs. However, doctors at Specs emphasise the importance of discontinuing patients for treatment as it is both costly and time consuming to treat patients that is not in need of care. Processes and guidelines for when to discontinue a patient have therefore been developed at Specs as doctors want to use the available resources to patients that actually need it. Accounting information is thus used to support decisions on discontinuing patients and make sure that resources are used efficiently. This is illustrated by the quotation below:

"We simply have to see those patients who need care, and thus we can't keep controlling those who don't need care [...] And I think especially out on the smaller clinics, they've had it a little tougher to find guidelines for this [discontinuing]. And it is something that we are discussing a

lot at a national level, how to do that. It's pretty easy to find indications of when to start treatment but it's not as easy to decide when to end it." (Specialist doctor 1)

4.3. Improving operational management of resources using accounting information

An efficient use of material, pharmaceuticals and devices

"The thing is, we need the medicines, and the material we must have... The thing you can influence is really staffing and personnel." (Clinic manager 3)

The most common response from the interviews with clinic- and unit managers when discussing materials, devices or pharmaceuticals, is that even if they have the formal budget responsibility for these, they have little ability to influence it, as illustrated in the opening quotation. They emphasise that the primary thing they are able to influence in terms of budget issues, is recruiting and layoff of personnel. Hence, the response is similar to the doctors' in the sense that they are aware of the financials but that they do not want it to affect the care and treatment of the patients. Unit managers often express a situation where they are in the hands of doctors; if doctors need material, devices or pharmaceuticals for treatment, the managers do not have a saying in that:

"And there are a lot of things that I really can't control, for example if they [doctors or nurses] control pressure [on patients] a lot and that costs 10 SEK per procedure, I can't just come and say that 'you can't measure the pressure this much', but the things is just that we simply must do it." (Unit manager 1)

However, even if clinic- or unit managers express a low ability to affect the use or management of tangible resources in the treatment situation, they do describe several other situations where they can impact and which is based on a rather pronounced economic thinking. Especially for decisions only impacting administrative tasks, costs are often taken into consideration. Several interviewees passionately discuss the use of paper and how the clinic has taken several actions to reduce this use in recent years when trying to exemplify their economic mind-set: *"Printing paper that is prepunched or not? There you can discuss if they should go for prepunched printing paper or not because the prepunched are less expensive, and some prefer with holes and some without."* (Unit manager 4). However, several decisions of a more medical nature have also been observed where accounting information influence the decision-making. One such example is when deciding what pharmaceuticals to store at each location. By having the budget

responsibility, unit managers can have an overall view of usage and the yearly storage costs of having pharmaceuticals at the different locations and based on this, make decisions of whether to store the pharmaceutical, have it available in the pharmacy or only store it at one of the locations.

"But on the other hand, we have examined if we have pharmaceuticals in our refrigerator for a patient who will maybe come once every six months, and we have looked at the annual cost of that [...] Couldn't we instead call the pharmacy and ask 'could you prepare this [the pharmaceutical] on 3 hours or 12 hours?' so we could say that when we need it then [...] and sometimes we send medicines between our two locations in a taxi. Because it is cheaper to send a taxi for 170 bucks than to have it in storage at both locations." (Unit manager 1)

A similar example of when financial information is used to make decisions about resource efficiency and learn about different alternatives is when it comes to devices; deciding whether to have a device at one or both locations or to not even having the device at all:

"Now when we looked, we had some laser equipment that was used a lot for 10-15 years ago and then I knew that we only did two treatments in 2014, and in 2015 I think we did two as well. Expensive treatments, and it costs 20,000 to provide service on this laser equipment. And it just stands there, and then the question is: we have not performed any such treatment this year, should we really have one [such device] at both locations? Thus, I raised this issue and said that we should say that now the patients have to gather in one place so we can scrap the worst of the two lasers." (Unit manager 1)

Several examples also illustrate that Specs works to achieve a more efficient management of materials. For example Specs has introduced systems that automatically decide when refills of inventory has to be made: *"Now we will start to have stock controls [...] And that will control it [refers to basic material such as compresses and gloves], and say that we always need this many packages of this at the operating room, and when there is only three left we have to order four more."* (Unit manager 4). Such stock controls enables quick decisions based on accounting information on usage and inventory to be made, as well as increasing efficiency and simplifying operations. Moreover, Specs has put much focus on reviewing and standardising the stock for materials. If they are able to use fewer versions of the same material for example, the clinic can make several costs savings. This is explained by one of the unit managers:

"When we talk about instruments now, there I have tried to sort things out. If a doctor comes to a nurse and says that 'now I want this tweezer' and the person responsible for ordering it comes to me and motivates this. But then I think, I guess I have learnt by now, that when the next doctor comes and want another tweezer then I think, the doctors are working in different teams, that they have to discuss so that they somehow at least do things in a similar way. Because otherwise we risk, if that doctor quits, that no one wants that material anymore." (Unit manager 4)

One member of the functional unit's management team further discusses the work of creating more efficient management of material and says that when the clinic has some especially expensive materials for example, (s)he extracts data on this to see what it is, how much they have used and what it costs. Together with a responsible manager this data is then discussed in order to understand if improvements can be made. Thus, accounting information is used to make decisions on how the clinic best can manage its resources:

"Well, surgery materials that is an item that is somewhat more expensive and there I can see how much it costs, look closer on those accounts, what invoices there are and then the responsible manager assesses this and see if there is anything we can do, do we buy from the right suppliers, do we buy the right things" (Member of functional unit's management team 2)

Streamlining and optimising production to achieve time efficiency and remove inefficient practises

Standardising the use of materials also has positive effects for production as when using more standardised procedures, time savings can be done as well. Hence, by using accounting information to find cost savings in material supply, Specs also achieves improved procedures for patients and becomes more time efficient. This is illustrated in the example below when a clinic manager is deciding whether to use one type of material instead of two or eliminating unnecessary materials. Hence, accounting information is used to understand these different alternatives with the aim to improve both production- and cost efficiency.

"Standardise to begin with [...] There you have the savings, one type or two types [of a certain material]. A routine, 'this is how we do it', that's where you have the savings. We look at those kinds of things. These injections for example, as they are so many you have to buy a set of surgical drape and in each set it includes a metal scissor. A pair of scissors in metal to cut the paper with, which are one-offs, so you just 'wow, it's so much waste here'. But we are looking at

this, 'yes, then we go with pre-cut surgical drapes'. And we are looking at how to completely skip lots of things, we also use a metal clip that is holding up the eye as when injecting into the eye, that one we will remove [...] Actually, I would say it is more about efficiency, time efficiency [...] and the financials always improves if we create better flows." (Clinic manager 1)

Moreover, as increased production has been a key focus at Specs in recent years, much has been done to make procedures more efficient, which in hand also improves the financials. Accounting information on production, queues, productivity and costs has been used to create an understanding for where Specs can become more efficient. For example, one clinic manager explains how they at the clinic have found that they can improve production by focusing on: *"Streamline, gather the OP [surgery] floors. We have all OP within the highly specialised care unit in one OP floor."* (Clinic manager 1). They have also decided to give injections in sterile rooms instead of in operating rooms as this increases efficiency: *"So we have also slimmed down this process, "chop-chop!"[...] we do these [the injections] in a regular reception room which is a sterile room, instead of taking it to OP [surgery department] where you have to change cloths and do all those kind of stuff."* (Clinic manager 1). Another example of streamlining the operations is the newly introduced functional schedule that, as discussed above, visualise what resources, in terms of rooms and doctors, are available. With this, it is also more strictly decided for how many patients each doctor within the different medical areas should see each work shift:

"The advantage with the functional schedule is that it is even more strict regarding minimum staffing, staffing of doctors, and there we can see directly [...] it's better than it was before because before each doctor could themselves determine how many patients to see. Now it's a bit more controlled as you are expected to produce this and this much for a certain type of medical speciality." (Specialist doctor 5)

The introduction of the functional schedule has enabled operations to become more productive, as there is now a set target for how many patients each doctor should see and hence how much time should be spent on each patient. Thus, accounting information is used to make such efficiency decisions. A member of the functional unit's management team responsible for finding and implementing such operational efficiency improvements further discusses this and emphasises that even if, *"[I]n basically everything I do, I restrict freedom."* (Member of functional unit's management team 3), (s)he points out that it is important to understand that the best patient care is perhaps not to give some patients everything they request, but rather that all

patients in need of care is able to get that: *"Perhaps the biggest step is that you fully understand that it is for the patient's best just to get here, and perhaps not that the patient I have in front of me get what it wishes, but rather that all patients get what they need. That I think it is a key factor."* (Member of functional unit's management team 3). A clinic manager further discusses this and emphasises that the balance between spending more time on one patient and being able to see more patients in one day, is discussed among doctors and is something they all have an understanding for; the importance of time and that time is valuable in financial terms:

"Of course, time is money and if we spend just five minutes extra per patient, which of course would be nice for the patients, but it will affect someone else. It leads us to not being able to meet that last patient for the day. So we have that discussion and they have an understanding for that.

The common good and the patient's best, it's an important balance." (Clinic manager 1)

4.4. Motivating allocations of resources by presenting accounting information

Internal distribution - Motivating allocation of available resources within the clinic

"For one thing, there's this thing about queues, it is always like, I guess it [queues] is a key ratio everywhere, for how long you have the right to wait." (Specialist doctor 2)

As discussed above, increasing production and decreasing queues have been key focus areas for Specs for several years, much due to having long waiting times to some sub-specialties at the clinic. Therefore, the responsible people at Specs carefully follow up on queues and non-financial metrics connected to queues and production. Key ratios on queues have therefore become effective sources of information to use when deciding and arguing both for how resources should be assigned to- and allocated within the clinic. In order to reduce and work more efficiently with queues, the clinic has been medically divided into three competence areas; surgery, specialised clinic and general clinic. A doctor called "Knowledge Area Responsible" has responsibility for the care within each of these areas and these are then further divided into subgroups of competences with another responsible doctor, "Knowledge Group Responsible" (KGR). Each KGR has a queue linked to their area of responsibility to enable them to closely follow and react, depending on the outcome of the metrics.

"Each such KGR has a queue attached to them. That is, a patient flow or possibly two patient flows [...] so here's the deal with the queues for that flow, and here is what you have produced in

that patient flow. And in that way, the equation is pretty clear, so the task they have been given is to keep track of this and inventory needs and knowledge, equipment, personnel. To optimise that.” (Clinic manager 1)

Both managers and responsible doctors highlight the importance of following queues and the use of this non-financial metric to support their opinion of how resources should be allocated within the clinic. For example when setting the schedule, queues are used to support requests on how doctors and other personnel should be allocated: *"Then we look at their schedule, at the medical schedule for the doctors and at the reception schedules that we have in our booking system. Then we look at which unit has the longest queue and then we can make suggestions accordingly."* (Unit manager 3). Thus, accounting information on queues and production is used to decide for how resources should be allocated. Observations also show that the KGRs are fighting for their specific area of responsibility by showing these metrics and addressing especially long queues or emergencies:

"My task is to fight for my field of specialty. One could say that I don't consider the other units and they, of course, reason in the same way and then, it's up to us to present how many patients we have in our queue, or what is urgent right now, so we can get this through. (..) I'm not in the scheduling group, but I do send in suggestions on how I think it should be planned and then I get their opinions back, so I can come with input on that. And that applies to everyone who holds my position, it's a bit like fighting for whom should get the most rooms and most of the staff, sort of."
(Specialist doctor 1)

From the interviews, it was also stressed that the different groups of professionals are intertwined when it comes to recruiting, as an additional doctor means a need for additional nurses and medical secretaries. If an extra doctor is hired, this information together with historical data on average production of a medical secretary and similar, is used for example to show the additional need of a medical secretary: *"Then I show it because I simply count number of dictates in and what increase we have there. And then, we have done a lot of work to figure out how much one can produce every day as a medical secretary."* (Unit manager 3)

External allocation - motivating additional resources to the clinic from the hospital management

Accounting information is also used, and sometimes required to be used, to motivate additional resources for staff, devices, pharmaceuticals or rooms to the clinic. A clinic manager clearly states that if one is able to back arguments with financial information, you can also get your idea through. For example, when arguing for more space, (s)he had showed what it would cost Specs to send patients to another hospital in another county if they would not get the requested rooms:

"If you can just derive the numbers all the way back you will be believed [...] I calculated when we were building this house here and there was no one who wanted to let us in to any operating theatres. Fine, we can send all our patients that we receive [to other hospitals in other counties] [...] Yeah, I don't remember how many millions it would be, maybe 24 million, yeah it was a lot of millions it would cost to send the patients away. And then: 'Oh dear, yes, then it might be that we need to fix space' and then you fix the space in [their own clinic] for this. So the accounting 'talks' to you if you can derive the numbers." (Clinic manager 1)

A similar example is also illustrated below, where the same clinic manager calculate costs and production given a certain number of doctors to influence the decision makers and get the requested amount of funding:

"I figured out exactly how much [...] the clinic would be able to generate if one say for example in a 100% system, this is what we can generate with this budget [...] if we have 34 doctors, we can generate this. And if you give me a budget for 30 then I can generate this. So that you only show this and the actual effects of it, 'well okay then we understand'." (Clinic manager 1)

Thus, accounting information also has a central role in the recruitment process; when deciding whether Specs will receive additional resources for a new recruitment. Here a recruitment request must also be performed to motivate increased funds. For these decisions, information about queues and production is used to visualise the need for recruitment within the respective personnel group. To make this visualisation even more explicit, a tool for tracking utilisation rate of personnel has recently been introduced which is supposed to be used in such recruiting decisions:

"We have introduced an ordinary Excel file where one can enter how much one has utilised one's staff to see if you go minus or plus. So it is a tool for us to follow that. And we are in the process that immediately when we should hire someone, we have to make a recruitment request that is sent to the functional unit manager, financial director and HR director. And then it is easier for you to write that you don't have full utilisation³. So we control it more thoroughly." (Clinic manager 3)

In case of a new investment for a medical device or receiving funding for a new expensive pharmaceutical, a similar procedure to the one used for recruiting is needed. For example, a replacement after a mechanical breakdown of a device is motivated with information on queues, patients booked for this specific device and economic consequences of having stagnant production:

"You don't just buy things for the fun of it but you have to justify what you need it for. But if it is a failure, then it will go under 'breakdown appropriation' and then it [the request] should go to someone there [working with breakdown appropriation] to decide and then it should be registered on some object code, and then the money will be taken from somewhere else. Because, it could also be the case that we have booked 40 patients and the camera breaks down. That would mean that for a week we can't treat these patients and then the money will be ticking somewhere else. Then it just must be solved." (Unit manager 1)

The process is similar when introducing a new pharmaceutical: *"If one is to introduce a new drug that is that expensive, you need an approval from the hospital management if it is ok. It's called 'particularly introduction'."* (Member of functional unit's management team 2). In this procedure accounting information on for example costs and increased production, is presented in order to get the request through. A member of the functional unit's management team further explains how they work with this:

"It is a document on how many patients there are and the costs. To be able to comply with the national guidelines and regional guidelines, we have to take this many more patients. Then perhaps we need additional staff to manage it, and then an enhanced budget is needed."
(Member of functional unit's management team 1)

³ With full utilisation the clinic manager means that (s)he does not use all the money assigned for personnel in the budget

As discussed above, in the case of the expensive pharmaceuticals along with the off label alternative, Lucentis, Eylea and Avastin, there has also been an intense discussion on both clinic and regional level for which pharmaceutical to use. The discussion centred around whether funding should be given to the cheaper pharmaceutical, Avastin, or the more expensive ones; Lucentis and Eylea. *"It's been a pretty lively discussion and people in different parts of Sweden have decided to go for different things [choice of pharmaceutical], and it's a lot about finance in that."* (Specialist doctor 3). In this discussion, accounting information has been used to argue for the different alternatives: *"There was an article in the medical journal, a professor working within Neuro (...). And he had a very critical article about how much are these diseases allowed to cost."* (Specialist doctor 2). However, as the region for which Specs is part of have decided to move the cost liability from the individual clinic's budget to the county's budget the discussion about the three pharmaceuticals ended as neither the cost nor the savings could be assigned to Specs' budget, creating no incentives to use the cheaper pharmaceutical: *"It kind of made it [the discussion] run out of wind, to push that extra hard, if you were not allowed to utilise the savings made if replacing the drug."* (ST doctor 2). This illustrates that accounting information and accounting implications have a central role when arguing in such discussions.

4.5. Three decision-making situations where accounting information is used

The three decision-making situations derived in the literature review have been confirmed and further elaborated upon here with respect to the use of accounting in the case organisation Specs. Observations show that in decisions of treatment choice, accounting information do not have much impact prior to the decision but instead guidelines foremost based on medical knowledge is almost the sole basis for decisions. An overall economic mind-set can be observed among doctors, resulting in treatment choices being affected by accounting information in some especially uncertain decisions or when several medically justified alternatives existed. However, the farther from the treatment situation an activity is, the more explicit is the use of accounting information for operative decision-making. The introduction of stock controls is an example of where clinicians included financial considerations when planning production to not have an excessive amount in stock. Accounting information is also used when deciding upon operational resource management, meaning how to best manage resources such as material, devices, pharmaceuticals, rooms and personnel to achieve operational efficiency. In allocation of resources both to and within the clinic, accounting information is of a high value for realising and

arguing for an appropriate distribution. Observations thus show that accounting information is highly present in the clinic's operation in many situations, though not as much in the face-to-face encounter with the patient but rather in situations surrounding the treatment choice. The different situations where accounting information is used is outlined in the table below, and the specific use of this will be discussed and elaborated upon in the following chapter.

Situations in Specs when accounting information is used for operational decision-making		
Treatment choice	Operational resource management	Strategic resource allocation
Showing and explaining effects of medical decisions Choosing the cheapest alternative for medical examination Considering treatments with little medical proof	Decision on what kind of materials and devices to have and what pharmaceuticals to store Stock controls Streamlining processes to achieve time efficiency	Allocating resources to the clinic; applying for additional funds for pharmaceuticals, new investments, funds, rooms, new recruitments Distributing resources such as doctors and rooms within the clinic

5. Analysis

In this section we will analyse our findings of the use of accounting information in Specs and by doing this we will provide an answer to our research question presented in the introduction:

How is accounting information used in operational decision-making at a hospital clinic?

In section 5.1. the theoretical framework developed by Burchell et al. (1980) will be used to analyse how accounting is used in the three decision-making situations which was derived in the literature review and further presented in the empirics: treatment choice, operational resource management and strategic resource allocation. Using the machine analogy of Burchell et al. (1980) the different roles of accounting found at Specs will thus be presented and discussed. In section 5.2. we will continue by reflecting on how these results connect to previous research within the field and suggest a more granular understanding of the role of accounting. Thereafter, in 5.3., we discuss these findings in relation to the medical or ethical considerations present in the healthcare organisations. Lastly, in 5.4., we illustrate when and how accounting is used for operational decision-making in a clinic setting.

5.1. The role of accounting information in a hospital clinic

In the conversation about financial information, the spontaneous reaction from all interviewees, both medical professionals and administrators, is that financial information is secondary to the medical consideration. The key focus is patient safe care and it seems as if interviewees want to signal that they do not think financial information should intervene in this. In most situations, predominant in the treatment choice, accounting information is indeed secondary to the medical consideration and has little effect on decision-making, leading to accounting information often being used to rationalise such decisions. However, the case study of Specs show that, even though clinicians want to picture themselves as highly opponent to financial information, and in some situations are, we see indications that accounting is actually used even to some extent in treatment decisions. However, in decisions surrounding treatments, accounting seem to gain an even larger role and is used to facilitate decisions and support arguments; deciding how resources should be managed and allocated.

Solve for simple computational problems

The primary concern in the treatment choice at Specs is the medical consideration, and to a large extent this is the only consideration made. However, even if all interviewees say that accounting does not influence their decisions in the treatment choice situation, observations show that at times it actually does. There is evidence that all personnel, medical staff and administrators, have an underlying economic thinking. For example when several medically justified alternatives exist (e.g. the case with mutation analysis versus screening) or when deciding what paper to buy to the clinic, choices are made on a lowest cost basis. Thus, this is the case both for more administrative decisions as well as in the treatment choice, but where the latter can be perceived as more unexpected and hence a more interesting aspect to discuss further. For a business driven company, using financial information to choose between equivalent alternatives is the normal way to proceed. But since healthcare organisations, such as hospitals, have historically been guided by the professional knowledge of their expertise area and had a strong opposition towards financial information (Jacobs, 1995; Broadbent & Laughlin, 1998; Doolin, 1999), using accounting even in treatment decisions does not go without saying. But at Specs, observations show that accounting is used to solve for more simple computational problems between options that are medically justifiable, though not necessarily meaning that they are equally good. The uncertainty in these decisions is low both concerning causality and objectives; two medically justified alternatives implies that the medical implications are about the same and when thus the patient has been secured a safe care, the aim is to choose the option with the lowest cost leading to a financially rational decision. Accounting is thus used somewhat as an answer machine to solve for this, quite low, uncertainty. However, important to note is that the case with mutation analysis is more or less the only situation found when accounting is used similar to an answer machine to support the treatment choices at Specs. In all other treatment situations, accounting has little influence before the treatment decision is made, or at the most, used as an additional source of information.

Another area where accounting is used to solve for more simple computational problems is observed in the operational management of materials, as for example the introduction of stock controls in the surgery unit. The decision for when to buy more material at Specs is made automatically when a specific level of inventory is reached; accounting information on inventory and usage decides when to order new materials to make operations more efficient and not have too little or too much in inventory. Yet again, this is a situation where uncertainties about both effects and objectives are low as there is only a matter of when to order new material and

accounting is therefore used to automatically solve for this computational problem; used as an answer machine. However, we stress that this is the only situation when accounting used as an answering machine is found for operational resource management and the most prevalent machine in this situation is instead the learning machine, which will be further elaborated upon in the following section.

Learning about different operational outcomes

Evidently, accounting is used in Specs to solve treatment decisions of a more computational nature when several medically justifiable alternatives exist, but also for calculative problems when managing resources. However, interviews reveal further indications that accounting at times is used also in more complex decisions in the treatment choice but also in operational resource management. When medical guidelines, science and previous medical experience are insufficient in the treatment choice, meaning that doctors are not as certain of the results of a specific treatment, doctors demonstrate having an underlying awareness of financial information and that this is taken into consideration when deciding upon treatments. For example, they consider whether to start a long and costly treatment when there is little medical evidence to support such decision. Here accounting information is used as a tool to understand the financial implication of a specific decision; implying that accounting is used somewhat as a learning machine. Accounting is though not used to understand the entire uncertainty about all the effects of the decision, but only the financial part. In Burchell et al.'s (1980) definition of the learning machine, accounting is used to absorb more or less the whole uncertainty of a decision. This is not completely the case here, as accounting information does not help to solve for the medical uncertainties in the decision. However, Burchell et al. (1980) also stated that there are multiple versions of the learning machine and one type is the one when accounting is used as assistance or support to make decisions. Therefore, when results are more uncertain in treatment choices, accounting is used as an additional source of information of which to take into consideration when uncertainty about cause and effect increases. Thus, accounting is used to learn more about the different alternatives and support the treatment choice; somewhat as the learning machine.

Another example of this is the case for the pharmaceuticals Lucentis and Eylea where research has not demonstrated any negative side effects for longer and repeating treatments, meaning doctors can in practice justify lifelong treatments. However, even though a lifelong treatment with these pharmaceuticals can be argued to be righteous, interviewees at Specs states that they are particularly good at discontinuing cases that show weak results, even if they medically can

justify a continued treatment for several more months or even years. This case, yet again, shows that accounting information is used as an additional source of information in a treatment decision when uncertainty about cause and effect increases, which is in line with the reasoning explained above.

Furthermore, the area where the learning machine is perhaps found to be most prevalent is in the decision-making for operational resource management. When deciding how to manage different resources within the clinic, accounting is usually used to learn about different alternatives. Here, doctors and managers are able to make decisions that are not directly connected to the treatment choice, and thus seem to be more inclined to consider financial information than in the treatment situation. When deciding what pharmaceuticals to store, devices to have or materials to use, accounting information is used to facilitate the decision. By using information such as usage rate, cost, production and alternative cost for example, different alternatives are evaluated for how to use resources most efficiently both medically and financially.

Similar situations when accounting is used to learn about resource management decisions at Specs have also been observed in the process of improving productivity. At the clinic level, the productivity goal has been broken down in more specific terms as for example having an upper limit for numbers of patients waiting to get an appointment. To meet these goals the clinic must also be able to optimise human resources and become more efficient per patient. Here, the functional schedule and calculations on time per patient are used to optimise work streams and make sure personnel or rooms are not set as idle. This puts pressure on the clinic to find these improvements within their operations. The relocation of treatment room for injections from surgery to a sterile room, freeing up room for other types of operations as places for surgery are more scarce than sterile rooms, is another example where calculations on time and space efficiency is used to make decision on operative improvements. To find all these optimal solutions, accounting is used to set up alternatives for different decisions and hence accounting information is used to learn about and develop the operations. The objective is clear, to provide an efficient and safe care, but the uncertainty about cause and effect is higher, the optimal way to manage these resources, and this latter uncertainty is thus reduced by accounting information being used as a learning machine.

Supporting arguments in negotiations

The discussion above has shown that accounting is used at Specs to solve simple computational problems and when learning about different alternatives, both in the treatment choice situation and when managing resources at the clinic, though it is perhaps more prevalent in the latter. However, for decisions of strategic resource allocation, we observed that the use of accounting is even more visible. Perhaps the situation when accounting is used the most for decision-making at Specs is in negotiation with others both externally (hospital- and region management) and internally (within the clinic). One such example is when requesting funds to the clinic for recruitments, new pharmaceuticals, new devices or rooms. Here, accounting information on key ratios of queues, production and costs are presented to argue for more funds to the clinic. Several quotations quite distinct illustrate that when accounting information is used to visualise the use of new funds, managers at Specs are able to reach through to decision makers and easily get their request approved. The discussion about the new pharmaceuticals; Lucentis, Eylea and Avastin, is also an example of a similar situation. Doctors not working with these diseases have used arguments such as “how much are these pharmaceuticals allowed to cost”, when arguing for the use of the cheaper pharmaceutical, Avastin, to be used. In these situations, the uncertainty about cause and effect is low; both decision makers and staff at Specs know that receiving more funds for a new recruitment, pharmaceuticals, devices or rooms will be beneficial for the clinic as it enables increased production and improved care for patients. However, the uncertainty regarding objectives is higher. Decision makers do not know which unit or clinic to prioritise, if it for example is preferable to enable more eye care or more cancer treatment. The objective of the hospital and county is to deliver high quality care and a high production of health care, though it is not specified in what areas. Hence, the uncertainty about objectives in decisions of how to allocate such new funds is high. Accounting information is here used to help decrease this uncertainty about objectives by visualising the use of extra funds and resources. Moreover, accounting information is used to build arguments to get the request through; used as an ammunition machine.

A similar situation characterised by accounting information being used as an ammunition machine, is observed when resources are about to be distributed also within the clinic. This negotiation is rather between Specs’ own staff, than between Specs and external parties. The key decision is what subspecialties within Specs to prioritise when allocating resources such as doctors, nurses and rooms. Here, the responsible doctor for each subspecialty argues for its own speciality by presenting non-financial key metrics on queues to the scheduling group. Several

interviewees describe a situation where subspecialties “fight for their own group”, pointing to accounting being used as an ammunition machine. Similar to the negotiation described above between Specs and external parties, the uncertainty about cause and effect is low as additional resources will increase production, but the uncertainty about objectives is high; which subspecialty that should be prioritised.

Rationalising decisions

Two frequently observed uses of accounting at Specs are the learning- and ammunition machine, identified especially in operational management of resources and for strategic allocation of resources. In these machines, accounting is used prior to a decision being made; meaning that it in some way is used to facilitate the process of taking a decision. However, another yet prevalent use of accounting observed at Specs is for rationalising decisions; accounting used as a rationalisation machine. In the rationalisation machine, as discussed in section 2.2., the use of accounting must not always precede an operative decision and influence it beforehand as there can also be a need for reviewing and understanding, or justifying, a decision in retrospect. One such example of when accounting is used to justify decisions is in the use of the new expensive pharmaceuticals, Lucentis and Eylea, in the treatment choice at Specs. When discussing these pharmaceuticals, doctors and managers rationalise the use of them by pointing to the overall cost-savings that society will make if patients are treated. Hence attention is therefore drawn towards accounting information on these additional costs for society if patients are not treated in comparison to what it would cost if these patients are treated. This situation is characterised by high uncertainty both when it comes to causality and objectives. Treating a patient can lead to a healthier individual and reduce costs for society, but the treatment may also not generate the desired outcome leading costs to increase even more. Thus, the uncertainty about causality for the decision is high. The objective is also uncertain, similar to the one observed in the ammunition machine; if money should be allocated to these pharmaceuticals or invested in other areas of the healthcare service. Thus, as uncertainties are high both concerning causality and objectives, accounting information is used to rationalise these decisions; used as a rationalisation machine.

Accounting used as a rationalisation machine where the use of accounting becomes visible rather post- than pre an operative decision can also be found in other treatment choice situations at Specs. As discussed above, many decisions in the treatment choice is made predominantly based on medical considerations, hence if there is a medical need for materials, pharmaceuticals or other resources, this need will be satisfied. This is for example illustrated by managers saying that

they just cannot stop production or “quit measuring pressure” because it is expensive or the clinic manager saying that if the pharmaceutical budget is about to be overrun (s)he just analyses it and explains the variation, but (s)he cannot do much about it because patients need them. Thus, interviewees illustrate a situation where it becomes important to keep track of the budget, costs and income, but not necessarily do anything about it if deviating from the plan; rather it becomes important to be able to explain what has happened and justify the medical actions taken. Besides explaining why some costs might have peaked, measures on how to deal with budget overruns must also be formulated. However, yet again, the role of accounting is to explain how these overruns can be handled to achieve a balanced budget, but in practice they are not always carried through as other things that are medically required might prevail. This is similar to the situation described by Kurunmäki, Lapsley & Melia (2003) in what they equalise to accounting being used as Burchell et al.’s (1980) rationalisation machine. The budgets in Specs are also more or less based on historical numbers with little changes from year to year, and only when special situations occur, for example new investments in devices, new pharmaceuticals or new recruitments, accounting information is used to influence prior to operative decisions. Instead managers at Specs describe situations where it is difficult to assess whether the budget is reasonable, as unpredictable but yet medically justified events can occur. As a result, the budget is used to explain and enable to keep track of outcomes so that the clinic can rationalise decisions in hindsight. The uncertainty about objectives is arguably high in all these treatment choice situations described, as one of the goals is to have a budget in balance but simultaneously Specs must be able to provide care and fulfil the needs of the patients. Besides, it is difficult to assess all financial effects of the treatment decision, thus accounting is used to explain effects of operational decisions and justify them in retrospect; in other words, used as a rationalisation machine.

Overview of the different uses of accounting information illustrated with quotations from this study's empirical findings

	Treatment Choice	Operational Resource Management	Strategic Resource Allocation
Answer Machine	<p>Choosing between several medically justified alternatives</p> <p>"We have these mutation analyses for example, they are very expensive. But there we try to send them on a cheaper screening first, and only if that one does not give any answers, we do the expensive one." (Specialist doctor 4)</p>	<p>Deciding for when inventories should be refilled</p> <p>"Now we will start to have stock controls [...] And they will be control it [refers to basic material such as compresses and gloves], and say that we always need this many packages of this at the operating room, and when there is only three left we have to order four more." (Unit manager 4)</p>	
Learning Machine	<p>Impacting decisions when medical guidelines are incomplete</p> <p>"There it may be considerations for and against whether it is reasonable to kick off a long-term treatment at a high cost on weak grounds, and then one gets to weigh in the risks for patients." (ST Physician 2)</p>	<p>Learning about efficiency improvements in processes:</p> <p>"The advantage with the functional schedule is that it is even more strict regarding minimum staffing, staffing of doctors, and there we can see directly (...) Now it's a bit more controlled as you are expected to produce this and this much for a certain type of medical speciality." (Specialist doctor 5)</p> <p>Managing tangible resources efficiently</p> <p>"We had some laser equipment that was used a lot for 10-15 years ago ... Expensive treatments, and it costs 20,000 to provide service on this laser equipment. And it just stands there, and then the question is: we have not performed any such treatment this year [?] " (Unit manager 1)</p>	
Ammunition Machine			<p>Arguing for resources within Specs</p> <p>"My task is to fight for my business. (...) it's all about to present that we have this many patients in our queue, or right now, this is urgent, so we have to get this through." (Specialist doctor 1)</p> <p>Illustrating the use of new funds</p> <p>"And if you give me a budget for 30 then I can generate this. So that you only show this and the actual effects of it, 'well okay then we understand'." (Clinic manager 1)</p>
Rationalisation Machine	<p>Rationalising the use of expensive pharmaceuticals</p> <p>"Then we talk about a lot of people who can actually manage themselves at home, who do not need help from 'the vision centre', who do not need extra help with food deliveries, domestic care services and all that stuff." (Clinic manager 1)</p> <p>Monitoring outcomes due to treatment necessities</p> <p>"Then I can see that it peaks there and what happens then is that I look at it and see: 'yeah this is damn expensive' but then I have to accept it because it is medically needed." (Clinic manager 1)</p>		

5.2. Creating a more granular understanding for the role of accounting in operational decision-making

Having used the decision-making framework by Burchell et al. (1980) to analyse how accounting is used in different situations at Specs we have found that different roles of accounting can be found depending on what situation, or for what task, it is used. Rationalising decisions, predominately treatment choice decisions, by using accounting information is a common observation at Specs and thus confirms a use of accounting that have also been discussed in several research articles before (e.g. Hopwood, 1984; Lapsley, 1994; Chua & Preston, 1994, Kurunmäki, Lapsley & Melia, 2003). A resistance towards cost information, in particular, to intervene decisions in the treatment choice unless several medically justified alternatives exist or medical guidelines are incomplete is observed among all professional groups interviewed at Specs; again somewhat in line with previous observations with doctors resisting accounting information (Jacobs, 1995; Broadbent & Laughlin, 1998; Doolin, 1999; Lapsley, 2008). However, these researchers have rather argued for a strong opposition toward all accounting information and have thus seen rationalisation as the only use of accounting in the healthcare organisation they have studied (Hopwood, 1984; Lapsley, 1994, Kurunmäki, Lapsley & Melia, 2003); pointing towards doctors as a professional group opposing all accounting information. In Specs on the contrary, as discussed above, several other uses of accounting information is also observed. Somewhat similar to researchers observing accounting becoming part of the clinicians' daily activities (Kurunmäki, 2004) or those arguing for groups of professionals embracing accounting logic (Broadbent, Laughlin & Willig-Atherton, 1994; Jacobs & Barnett, 1996; Broadbent & Laughlin, 1998; Kraus, 2012) we have observed several situations where accounting information has been embraced in the operational decision-making. Thus, at Specs accounting is used both to impact the decision-making process and also to rationalise decisions already made; implying different uses of accounting within the professional groups compared to previous research that has rather argued for one or the other phenomenon within the professional group. This observation confirms the suggestion by Blomgren (2003) that the medical profession should not be viewed as a homogeneous group and we therefore argue that the discussion should centre on how accounting is used in different situations rather than on professional groups.

Our argument for not centring the discussion on professionals groups as they are not homogenous, but rather heterogeneous and uses accounting information in different ways and for different tasks can also be discussed in relation to several researchers' findings. Similarly to

Coombs (1987) observations of doctors first reporting a use of accounting in some situations while later expressing a non-need for accounting information to make decisions, we observed situations when both doctors and managers use accounting information to make some decisions while in others the medical consideration is the predominant basis for the decision. Coombs (1987) argued that this does not necessarily mean inconsistency but rather that accounting is used in situations when perceived as appropriate and less when medical considerations is regarded more suitable. This seems also to be the case in Specs as, especially for treatment choices, interviewees do not find accounting information suitable in making decisions, while in operative decisions surrounding the treatment choice, accounting information is indeed used. This further connects to the discussion in Jackson et al. (2014) where clinicians pushed cost savings to non-clinical or non-patient services, thus implying that they used more accounting information for some tasks to enable them to practice medical freedom in others. Observations at Specs showed similar behaviours as accounting information is predominantly used in non-treatment choice situations; framing⁴ the treatment choice, but not affecting it directly. Jackson et al.'s (2014) evidence for clinicians prescribing cheaper forms of treatment for less complex cases in non-life threatening situations could also be confirmed when interviewing at Specs. If accounting information influence the treatment choice it is to decide between two medically justified, not necessarily equally good, examinations (non-life threatening) and it is then done on a lowest cost basis. However, we can also develop this reasoning of Jackson et al. (2014) and show that in more complex cases when medical knowledge do not provide a direct answer, accounting information is used in the treatment choice to learn about the financial aspects and decide whether it is justified to start a costly treatment based on little evidence. Though as pointed out, treatment choice decisions are generally made without considering accounting information at Specs, and it is rather in tasks surrounding the treatment, in operational resource management and strategic resource allocation, that accounting has more pre-decision impact.

5.3. Managing the dilemma of medical or ethical considerations and accounting information

Observations at Specs showed that accounting is used more frequently to make decisions surrounding the treatment decision. Thus, in Specs it seems as if it is not just the fact that clinicians and managers find different tasks or situations in which they use more or less

⁴ With framing we in this study refer to that decisions for operational resource management and strategic resource allocation both set the boundaries and indirectly shapes the treatment choice

accounting information active decision-making, but also that the farther away from the treatment choice it is, the more accounting is used. Doolin (1999) had a similar discussion and said that by having accounting controls surrounding the treatment choice, clinicians could be controlled in a more subtle way. We suggest that this phenomenon also is connected to the discussion in previous research that medical or ethical considerations are sometimes viewed as clashing with accounting logics (Lapsley, 1994; Broadbent & Laughlin, 1998; Llewellyn, 1998). As discussed in Llewellyn (1998), clinical expertise is generally accepted as the basis for deciding which medical treatment is effective and which is not, and as Lapsley (1994) discusses, such decisions involve medical judgements with different outcomes that are difficult to define and measure. Hence, accounting logics may be too simple and not able to neither solve for these uncertainties nor accepted as tools to do so. For decisions in the treatment choice all interviewees at Specs expressed that decisions are complex, even if perhaps not in a sense difficult for a doctor with a lot of medical experience, but as there are several aspects to consider, decisions cannot be made following a “recipe book”. Accounting information thus cannot solve such decisions, as it is too simple to incorporate all aspects. Therefore, at Specs, accounting only influences treatment choices as an additional source of information or after a medical consideration has been made. However, in decisions framing the treatment choice, in operational resource management and strategic resource allocation, the medical consideration is not as obvious and thus, accounting is used more to solve for these decisions. For example, similarly to observations in Kurunmäki’s (1999) study where calculations supported decisions for when to shut down redundant cure rooms and the number of patients to be treated in each, accounting information is at Specs used to learn about operational efficiency decisions; framing the treatment choice but not directly impacting it. In decisions for resource allocation, similar to the discussion in Doolin (1999), clinicians seem even more prone to use accounting information as it is almost seen as a requirement for such decisions. Furthermore, what can also be observed at Specs is that the “pure” answer machine is seldom used, rather variants of it is used in supporting decisions after medical considerations have been taken into account. The more reflecting and perhaps also more complex machines, namely the learning-, ammunition- and rationalisation machines are more visible. As these machines are arguably not as simple as the answer machine, they are perhaps more suitable to solve uncertainties in a clinic setting. Coombs (1987) also discussed this and said that the rate of uncertainty may be increased instead of solved when using accounting as a computational task, an answer machine, in an area such as the healthcare sector. Thus, using accounting in a more perceptive way, as the other machines, matches the complexity of the medical setting.

As illustrated by several quotations in this thesis, the tension between medical considerations and accounting logics, in terms of what accounting can solve and is socially legitimised to solve, discussed in previous research (Lapsley, 1994; Broadbent & Laughlin, 1998; Llewellyn, 1998) is prevalent at Specs as well. However, instead of discussing different professional roles embracing or distancing themselves from accounting information to manage this tension, we argue that by using accounting in different ways and for different tasks or situations, this tension can be managed. Moreover, even if clinicians have the dilemma, brought up by Broadbent & Laughlin (1998) and illustrated in the very opening quotation of this thesis, to care for the individual or the society at large, by mainly distancing the individual treatment choice from accounting information and instead be more financially efficient in tasks framing the treatment decision, this dilemma can be managed.

5.4. Illustrating when and how accounting information is used in a clinic setting

To illustrate the findings and analysis of this case study we have developed an extension to Burchell et al.'s (1980) decision-making framework, which more specifically combines their machine analogy with the three decision-making situations discussed in this thesis; thus it shows how and where accounting information is used for operational decision-making in a clinic setting (see figure 8). This illustration is divided into two specific parameters, namely *distance from treatment choice* and *complexity of decision*.

These parameters should not be compared to Burchell et al.'s (1980) uncertainty of causality and objectives, but instead be seen as two additional dimensions that more thoroughly assess the clinic situation.

		Complexity of decision	
		Simple	Complex
Distance to treatment choice	Short	Treatment choice: "Supportive" answer machine	Treatment choice: Rationalisation machine/"Supportive" learning machine
	Far	Strategic resource allocation: Ammunition machine	Operational resource management: Learning machine

Figure 8: Illustration of where and how accounting is used for decision-making in a clinic setting

For operational resource management decisions, which is framing the treatment choice, we mostly found accounting information to be used as a learning machine, as it is used to understand different alternatives and outcomes in the complex decision-making situations prevalent within operational resource management. The decisions are complex in the sense that many parameters need to be taken into account, which enables accounting to be used to enhance the knowledge of these possible alternatives and outcomes. However, decisions for strategic resource allocation, which is also framing the treatment choice, can be argued to be simpler in the sense that it concerns a binary decision; giving funding or not, even if the uncertainty of the decision for the hospital management is high in these situations, as discussed in 5.1. Hence, for decisions of strategic resource allocation clinicians use accounting information to get their ideas through, as an ammunition machine. Thus the learning- and ammunition machine are predominantly observed in decisions framing the treatment choice, and depending on the complexity of the decision itself, one or the other is used.

In the treatment choice on the contrary, the rationalisation machine is foremost found. Here, the arguably complex medical consideration in itself is rationalised after decisions have been made based on medical considerations as accounting logics may be seen as too simple, or not as accepted tools to make such decisions. However, in some perhaps even more complex medical considerations when medical guidelines are incomplete, the learning machine is found to support such treatment choices: a “supportive” learning machine. Moreover, in some treatment choices, when several alternatives can be medically justified, accounting information is used to make a simple calculative decision on a lowest cost basis. We do not see this as accounting being used as a pure answering machine but rather as a “supportive” answering machine. Thus, for decisions of treatment choice, three different machines are found, the rationalisation machine as well as “supportive” learning and answering machines, but which one is used depends on the complexity of the decision itself.

6. Conclusions

6.1. Revising the role of accounting for operative decision-making

This study has investigated the role of accounting for decision-making in a hospital clinic and expanded the understanding of different uses of accounting in a healthcare setting. Applying the decision-making framework of Burchell et al. (1980) we concluded that a prevailing use of accounting is rationalising decisions in hindsight, especially for treatment choices, confirming what many researchers already have illustrated in previous literature (Lapsley, 1994; Kurunmäki, Lapsley & Melia, 2003). On the other hand, previous studies have pointed to this as being more or less the only use while we in this study show how other uses of accounting information are prevailing in the clinic's operations as well. Treatment choices are as said rarely made based on accounting information, but situations surrounding the treatment choice are highly influenced by accounting considerations for decision-making. The exceptions in the treatment situation when accounting information do influence decisions, is when it is doubtful what results a treatment will generate or when there are several medically justified alternatives to choose between. In the first situation, accounting is used to give an answer to which alternative is the cheapest one while in the latter it is used as an additional source of information that is taken into consideration when deciding on how to proceed. This somewhat intrusion on the professional autonomy shows how accounting is affecting the core operations within a hospital clinic. Observations further showed that accounting information is most frequently used for decision-making situations surrounding the treatment choice; within resource management and resource allocation. To obtain more efficient work streams accounting information is used to learn more about alternatives and by evaluating these choose an optimal course of action. Looking at the different costs of different solutions and constantly following and adapting their practices accordingly show how the clinicians possess an accounting rationale for decision-making in these cases. Negotiating on distribution and allocation of resources demand arguments to be based on accounting information, as the medical benefit is not enough to get your idea through.

40 years following the introduction of NPM reforms, we argue that accounting has been incorporated into the decision-making of a hospital clinic as there is no longer a question of whether accounting is used but it is a question of for what tasks it is used, which we have also found indications for in previous research (Coombs, 1987; Doolin, 1999; Jackson et al., 2014).

Supporting this conclusion further are the indications of how accounting is even used in some treatment situations at Specs, though to a relatively small extent. Previous literature has shown a strong opposition by clinicians to the use of accounting information, as it is interfering with their medical consideration, which in turn has led researchers to look for who has embraced the accounting tasks or thinking (Jacobs, 1995; Broadbent & Laughlin, 1998; Kurunmäki, 2004; Jacobs, 2005). In contrast to this research stream we argue that the discussion should not centre on professional roles, which is also supported by Blomgren (2003) who argued that professions should not be viewed as homogeneous groups, but rather on situations. However, the tension between the medical or ethical consideration and accounting controls is still present, as simple accounting logics may neither be able to solve all decisions in the clinic setting nor accepted as tools to do this. We argue that this tension is managed by using accounting more in situations framing the treatment choice and by rarely using accounting computationally; as an answer machine. This study thus shows, contrary to previous research, how accounting information is not absorbed by special professional groups, but instead used in different ways and specific situations which do not directly intervene with the dilemma between medical- or ethical considerations and impacts of financial information. To deepen the analysis of the use of accounting we have suggested two new parameters; *complexity of the decision* and *distance to treatment choice*, which illustrate where and how accounting is used in a clinical setting. As discussed, the considerations needed to be made in this kind of setting is different from market based organisations, both in terms of what accounting techniques can solve and what it is ethically legitimised to solve. Thus the advanced framework presented in this study can be used to explain in what situations and how accounting can be used to manage these aspects.

6.2. Managerial implications

The healthcare setting rests on a deep-rooted culture in where medical knowledge is highly valued and clinicians' actions are legitimised by their specialised education within the field. What is ethically right could be said to control for the management of government owned healthcare organisations. But as production targets are raised and budgets restrained, it becomes increasingly necessary to create an efficiently run healthcare; because in the end a more efficiently run healthcare means opportunities to help more patients. The work of increasing the efficiency has been an undergoing procedure during the last decades assembled under the name NPM, but what we believe have been somewhat neglected is that in a country where the culture is based on equal values and equal treatment, it may not be the case that doctors should perfectly absorb accounting

information in all situations. Due to the ethical aspect of care, at least prevailing in the Swedish medical culture, tasks in the direct treatment situation is perhaps legitimised to only be affected indirectly by accounting information used in surrounding decisions. This tension between what is considered ethically right, or what is best for the patient in front of you, and what is optimal in terms of efficiency creates difficulties for controlling such an organisation. This study provides indications that to manage a clinic, or hospital for that matter, you need to make use of accounting information in situations so that the medical part of operations can be steered indirectly; framing the core treatment situation. We argue that when working with people and in areas where ethical considerations have a particular high impact, the rational accounting mind-set must find ways to affect decisions in areas that are seen as socially legitimised. Moreover, decisions taken in a healthcare setting involves judgements that are more complex than simple accounting techniques can solve, and thus one must use accounting techniques that matches this complexity.

In order to improve the way healthcare organisations are managed and to make sure that it is done with the scarce resources available, accounting has an essential role to play. With the long period of NPM reforms resulting in accounting rationales becoming part of operations, but which has also been widely debated and sometimes questioned in terms of their appropriateness, it might be the case that rather than supporting managers' efforts to control the core operations directly, it is better used in framing this core as well as if used less computationally. Understanding more thoroughly the use of accounting by healthcare professionals and in what situations they are more eager to allow it to have an impact can thus have large effects on creating control systems for these kinds of organisations. Instead of letting certain groups absorb accounting tasks, a system where clinicians are allowed to adapt their use of accounting for the situation, could benefit the overall performance of healthcare organisations. Perhaps these findings can also be of interest for other public organisations with similar characteristics.

6.3. Limitations and suggestions for future research

This study's overall contribution gives a suggestion for a new way of studying accounting's role for decision-making within healthcare organisations and opens up a new research stream that could be broadened both through quantitative- and qualitative studies. Since we in our thesis is studying an eye care clinic, questions could be raised for if the same results would be found in other medical specialities as they are characterised by different diseases with other treatment

patterns and pharmaceuticals. These differences may create other challenges, meaning that work practices when it comes to accounting information may differ. As the eye care division per se could pose different opportunities and challenges than other clinics, doing a case study in other clinics could generate additional insight to the role of accounting in healthcare organisations. This study was also conducted in a publicly run hospital which has a special mission in itself, not particularly always including an economic rational in their operations. This may impose other uses of accounting than if the clinic was not part of a larger hospital or instead driven privately for example. Performing a similar study within the same kind of organisation but in the private sector could potentially show different results, adding to the understanding of how accounting information is used for decision-making.

The move of focus from professional groups to situations has further led us to question why clinicians see it as more appropriate to use more accounting information for decision-making in some situations than in others. The discussion in this thesis on this topic focused both on the ethical aspect and complexities of the medical consideration compared to the simplicity and perhaps non acceptance of accounting considerations in treatment situations. Investigating more thoroughly underlying explanations for these differences would further enhance the understandings for accounting control mechanisms in public sector organisations.

Previous research within the healthcare setting has also pointed to the importance of, or at least towards important influences from, the nursing profession on a clinic's operation. Indications have been made that nurses could be important users of accounting information and would thus be an interesting addition for collecting data on this topic (Coombs, 1987; Blomgren, 2003). In this study we did not have the opportunity to interview any of the nurses at the clinic, and can thus neither confirm nor deny these hypotheses, why a future study where nurses are included when looking at decision-making at a clinic could add to the discussion on accounting's role in decision-making. In addition, our intention at the beginning was to study how decisions concerning the prescription of pharmaceuticals are affected by accounting information, or the role of accounting in these decisions. In our case, it was shown not to be an interesting research topic as the cost for these pharmaceutical was moved to a regional basis and hence did not affect the clinic's budget or actions. If there would be a similar example at another clinic, where some specific pharmaceuticals comprise a large stake of the total costs for the clinic, it could potentially be an interesting topic for future research.

As a concluding remark, we see the technical development as an indicator of that the use of accounting within the clinic setting can change in the future. In the analysis, a discussion was made regarding the complex medical consideration which cannot be solved by simple accounting tools. With the enhancements of technology, accounting tools might become advanced enough to solve for the variable uncertainties which the medical judgment involve. The findings of this thesis show that the most prevalent use of accounting in the treatment choice today is the rationalisation machine. Also, in line with the technical advancements fewer decisions might be taken with subjective professional judgement, perhaps making the answer machine to be observed as more prevalent. Thus, as technical advancements occur it becomes interesting to study this hypothesis in the future.

References

- Abbott, A. 1988, *The system of professions: An essay on the division of labor*, University of Chicago Press, Chicago.
- Abernethy, M.A., Chua, W.F., Grafton, J. & Mahama, H. 2007, "Accounting and control in health care: behavioural, organisational, sociological and critical perspectives", *Handbooks of Management Accounting Research*, vol. 2, pp. 805-829.
- Abernethy, M.A. & Brownell, P. 1999, "The role of budgets in organizations facing strategic change: an exploratory study", *Accounting, Organizations & Society*, vol. 24, pp. 189-204.
- Ansari, S. & Euske, K.J. 1987, "Rational, rationalizing, and reifying uses of accounting data in organizations", *Accounting, Organizations & Society*, vol. 12, pp. 549-570.
- Blomgren, M. 2003, "Ordering a profession: Swedish nurses encounter new public management reforms", *Financial Accountability & Management*, vol. 19, no. 1, pp. 45-71.
- Broadbent, J. & Laughlin, R. 1998, "Resisting the "new public management": absorption and absorbing groups in schools and GP practices in the UK", *Accounting, Auditing & Accountability Journal*, vol. 11, no. 4, pp. 403-435.
- Broadbent, J., Laughlin, R. & Willig-Atherton, H., 1994, "Recent Financial and Administrative Changes in GP Practices in the UK: Initial Experiences and Effects", *Accounting, Auditing & Accountability Journal*, vol. 7, no. 3, pp. 96-124.
- Bryman, A. & Bell, E., 2007. *Business research methods*. 2 ed. Oxford: Oxford University Press.
- Burchell, S., Clubb, C., Hopwood, A., Hughes, J. & Nahapiet, J. 1980, "The roles of accounting in organisations and society", *Accounting, Organizations and Society*, vol. 5, no. 1, pp. 5-27.
- Carlsson-Wall, M., Kraus, K., Lund, M. & Sjögren, E. 2014, "'Accounting Talk' Through Metaphorical Representations: Change Agents and Organisational Change in Home-Based Elderly Care", *European Accounting Review*, , pp. 1-29.
- Charpentier, C. & Samuelson, L.A. 1996, "Effects of new control systems in Swedish health care organizations", *Financial Accountability & Management*, vol. 12, no. 2, pp. 157-172.
- Chua, W. F. & Preston, A. 1994, "Worrying about accounting in health care", *Accounting, Auditing & Accountability Journal*, vol. 7, no. 3, pp. 4-17.
- Coombs, R. 1987, "Accounting for the control of doctors: management information systems in hospitals", *Accounting, Organizations and Society*, vol. 12, no. 4, pp. 389-404.
- Covaleski, M.A. & Dirsmith, M.W. 1988, "The role of budgets in organizations facing strategic change: an exploratory study", *Accounting, Organizations & Society*, vol. 13, No 1, pp. 1-24.
- Czarniawska-Joerges, B. & Jacobsson, B. 1989, "Budget in a cold climate", *Accounting, Organizations and Society*, vol. 14, no. 1, pp. 29-39.

- Dent, M. 1991, "Autonomy and the medical profession: Medical audit and management control" in C. Smith et al. (eds.), *White-collar work: The Non-Manual Labour Process* (Houndmills, Macmillan).
- Doolin, B. 1999, "Casemix management in a New Zealand hospital: rationalisation and resistance", *Financial Accountability & Management*, vol. 15, no. 3-4, pp. 397-417.
- Dubois, A. & Gadde, L-E. 2002, "Systematic combining: an abductive approach to case research", *Journal of Business Research*, vol. 55, pp. 553-560.
- Dyer, W.G. & Wilkins, A.L. 1991, "Better stories, not better constructs, to generate better theory: A rejoinder to Eisenhardt", *Academy of management review*, vol. 16, no. 3, pp. 613-619.
- Eisenhardt, K.M. 1989, "Building theories from case study research", *Academy of management review*, vol. 14, no. 4, pp. 532-550.
- Freidson, E. 1975, *Profession of Medicine: A Study of the Sociology of Applied Knowledge*, Dodd, Mead & Company, New York.
- Groot, T. & Budding, T. 2008, "New Public Management's Current Issues and Future Prospects", *Financial Accountability & Management*, vol. 24, no. 1, pp. 1-13.
- Hood, C. 1995, "The "New Public Management" in the 1980s: variations on a theme", *Accounting, Organizations and Society*, vol. 20, no. 2, pp. 93-109.
- Hood, C. 1991, "A public management for all seasons?", *Public administration*, vol. 69, no. 1, pp. 3-19.
- Hopwood, A. 1984, "Accounting and the pursuit of efficiency" in *Public Sector Management: Theory, Critique & Practice*, eds. D. McKevitt & A. Lawton, Sage Publications, London, pp. 145-159.
- Jackson, W.J., Paterson, A.S., Pong, C.K. & Scarparo, S. 2014, "Cash Limits, Hospital Prescribing and Shrinking Medical Jurisdiction", *Financial Accountability & Management*, vol. 30, no. 4, pp. 403-429.
- Jacobs, K. 2005, "Hybridisation or polarisation: doctors and accounting in the UK, Germany and Italy", *Financial Accountability & Management*, vol. 21, no. 2, pp. 135-162.
- Jacobs, K. 1998, "Costing health care: a study of the introduction of cost and budget reports into a GP association", *Management Accounting Research*, vol. 9, no. 1, pp. 55-70.
- Jacobs, K. 1995, "Budgets: a medium of organisational transformation", *Management Accounting Research*, vol. 6, no. 1, pp. 59-75.
- Jacobs, K. & Barnett, P. 1996, "A budgetholding experiment in New Zealand", *Financial Accountability & Management*, vol. 12, no. 2, pp. 107-124.
- Jacobs, K., Marcon, G. & Witt, D. 2004, "Cost and performance information for doctors: an international comparison", *Management accounting research*, vol. 15, no. 3, pp. 337-354.

- Jones, C. & Dewing, I. 1997, "The attitudes of NHS clinicians and medical managers towards changes in accounting controls", *Financial Accountability & Management*, vol. 13, no. 3, pp. 261-280.
- Kraus, K. 2012, "Heterogeneous accountingisation: Accounting and inter-organisational cooperation in home care services", *Accounting, Auditing & Accountability Journal*, vol. 25, no. 7, pp. 1080-1112.
- Kreiner, K. and Mouritsen, J. 2005, "The analytical interview: Relevance beyond reflexivity", in Tengblad, S., Solli, R. and Czarniawska, B. (eds.), *The Art of Science*, Copenhagen: Liber/CBS Press, pp. 153-176.
- Kurunmäki, L. 2008, "Management accounting, economic reasoning and the new public management reforms", *Handbooks of management accounting research*, vol. 3, pp. 1371-1383.
- Kurunmäki, L. 2004, "A hybrid profession—the acquisition of management accounting expertise by medical professionals", *Accounting, Organizations and Society*, vol. 29, no. 3, pp. 327-347.
- Kurunmäki, L. 1999, "Professional vs financial capital in the field of health care—struggles for the redistribution of power and control", *Accounting, Organizations and Society*, vol. 24, no. 2, pp. 95-124.
- Kurunmäki, L., Lapsley, I. & Melia, K. 2003, "Accountingization v. legitimation: a comparative study of the use of accounting information in intensive care", *Management Accounting Research*, vol. 14, no. 2, pp. 112-139.
- Lapsley, I. 2008, "The NPM agenda: Back to the Future", *Financial Accountability & Management*, vol. 24, no. 1, pp. 77-96.
- Lapsley, I. 2001, "Accounting, modernity and health care policy", *Financial Accountability & Management*, vol. 17, no. 4, pp. 331-350.
- Lapsley, I. 1994, "Responsibility accounting revived? Market reforms and budgetary control in health care", *Management Accounting Research*, vol. 5, no. 3, pp. 337-352.
- Laughlin, R., Broadbent, J. & Willig-Atherton, H. 1994, "Recent Financial and Administrative Changes in GP Practices in the UK: Initial Experiences and Effects", *Accounting, Auditing & Accountability Journal*, vol. 7, no. 3, pp. 96-124.
- Lehtonen, T. 2007, "DRG-based prospective pricing and case-mix accounting- Exploring the mechanisms of successful implementation", *Management Accounting Research*, vol. 18, pp. 367-395.
- Llewellyn, S. 1998, "Boundary work: costing and caring in the social services", *Accounting, Organizations and Society*, vol. 23, no. 1, pp. 23-47.
- Lowe, A. 2000, "Accounting in health care: some evidence on the impact of casemix systems", *British Accounting Review*, vol. 32, pp. 189-211.

- Maxwell, J.A. 2012, *Qualitative research design: An interactive approach*, 3rd edn, Sage, London.
- Merriam, S.B. 1994, *Fallstudien som forskningsmetod*, Studentlitteratur, Lund.
- Miles, M.B. & Huberman, A.M. 2014, *Qualitative data analysis: a methods sourcebook*, 3rd edn, SAGE, Los Angeles.
- Mouritsen, J. 1994, "Rationality, institutions and decision making: Reflections on March and Olsen's rediscovering institutions", *Accounting, Organizations and Society*, vol. 19, no. 2, pp. 193-211.
- Pollitt, C., Harrison, S., Hunter, D. & Marnoch, G. 1988, "The Reluctant Managers: Clinicians and Budgets in the NHS", *Financial Accountability & Management*, vol. 4, no. 3, pp. 213-233.
- Preston, A.M. 1992, "The birth of clinical accounting: A study of the emergence and transformations of discourses on costs and practices of accounting in US hospitals", *Accounting, Organizations and Society*, vol. 17, no. 1, pp. 63-100.
- Richardson, A.J. 1987, "Accounting as a legitimating institution", *Accounting, Organizations & Society*, vol. 12, pp. 341-355. Scapens, R.W. 1990, "Researching management accounting practice: the role of case study methods", *The British Accounting Review*, vol. 22, no. 3, pp. 259-281.
- Shaw, E. 1999, "A guide to the qualitative research process: evidence from a small firm study", *Qualitative Market Research: An International Journal*, vol. 2, no. 2, pp. 59-70.
- Silverman, D. 2013, *Doing qualitative research: A practical handbook*, 3rd edn, Sage Publications, London.
- Simons, Robert. 2013, *Levers of control: how managers use innovative control systems to drive strategic renewal*. Harvard Business Press.
- SKL, *Tillämpning av lagen om valfrihetssystem (LOV)* [Homepage of SKL], [Online]. Available: <http://skl.se/demokratiledningstyrning/driftformervalfrihet/lagomvalfrihetssystemlovttillampning.1969.html> [2016, 02/18].
- Thompson, J.D. & Tuden, A. 1959, "Strategies, Structures and Processes of Organizational Decisin" in J.D. Thompson et al. (eds.), *Comparative Studies in Administration* (University of Pittsburgh Press).
- Trost, J. 2014, *Att skriva uppsats med akribi*, 4th edn, Studentlitteratur: Lund.
- Tuckett, D. 1976, *An introduction to medical sociology*, London, Tavistock Publications.
- Yin, R.K. 2014, *Case study research: Design and methods*, 5th edn, Sage publications, London.

Appendix

Appendix 1: List of interviews performed

Interviewee	Medium	Number of interviews
Clinic manager 1	Face-to-face	2
Clinic manager 2	Face-to-face	1
Clinic manager 3	Face-to-face	2
Unit manager 1	Face-to-face	1
Unit manager 2	Face-to-face	1
Unit manager 3	Face-to-face	1
Unit manager 4	Telephone	1
Member of functional unit's management team 1	Telephone	1
Member of functional unit's management team 2	Face-to-face	2
Member of functional unit's management team 3	Face-to-face and telephone	2
Specialist doctor 1	Face-to-face	1
Specialist doctor 2	Face-to-face	1
Specialist doctor 3	Face-to-face	1
Specialist doctor 4	Telephone	1
Specialist doctor 5	Telephone	1
ST doctor 1	Face-to-face	1
ST doctor 2	Face-to-face and telephone	2
ST doctor 3	Telephone	1
Medical secretary 1	Face-to-face	1
Medical secretary 2	Face-to-face	1
Regional head of pharmaceutical control	Telephone	1
Total number of interviews		26

Appendix 2: Summerised Balanced Scorecard for Specs for the year 2016

Balanced scorecard 2016

Citizens' & patients' perspective	With the patient, for the patient
	The patient - a partner
	The patient is well-informed
	The patient receives a health-oriented care
	Satisfactory and safe care
	Satisfactory medical results
	Satisfactory nursing care
	Satisfactory hygiene
	Secure transitions within the care
	Safe enrollment and discharge
	Correct pharmaceuticals
	The patient should perceive the healthcare as integrated and comprehensive
The operations' perspective	Care when the patient needs it
	Care in time
	Care in the right place
	Efficient operations
	Needs driven and well planned production with a long-term planning perspective
R&D-perspective	Daily control
	Research for the future
	Scheduled time for research
	Increased commissioned research in the whole county
	Improved quality and increased volume of scientific publications
	Increase the number of research projects
	High quality of education
	Improved continuous training
	High-quality in clinical training
	Increased share of evidence-based care
The employee perspective	Increasing number of cases of orderly inclusion
	Competent, proud and committed employees
	Attractive and competitive employer
	Healthpromoting workplace
	Operations and results in focus
The financial perspective	Competence supply in the short- and long term
	Competent and communicative leader
	Finances in balance
	Financial results shall be equal to or better than the budget
	Sustainability in focus
	Fossil fuels-free, carbon neutral and climate-friendly operations
	Healthy environment The environment shall be free of metals and other substances that can threaten human health
	Sustainable resource use
	Strong environmental profile

Appendix 3: Examples of questions from the interview guide

As we used a semi-structured interview approach we did not follow the interview guide strictly. Also, questions were adapted to suit each interviewee better as well as along with the research focus taking form. Below are thus examples of questions asked.

Background

- 1) Can you briefly tell us about your role at the clinic and what specific tasks you have?
- 2) What are your key goals?
- 3) The care choice reform has recently been introduced in your specialty, how would you say it has affected you?

Decision-making in the treatment situation

- 1) How do you use different guidelines to decide for a diagnosis or treatment of a patient?
- 2) How do you reason when you are deciding on the diagnosis or treatment of a patient, what considerations are important?
- 3) What do you think about the medical and financial guidelines that the clinic have, do they create some opportunities for you in your work?
- 4) Have you ever felt limited in your work for example when deciding which treatment a patient should get?
- 5) When is a decision on prescribing or treatment particularly difficult to make?
- 6) We understand that there have been some new indications for the drugs Lucentis and Eylea, how have you discussed this at the clinic?
- 7) What considerations do you make when you decide whether a patient should receive Lucentis or Eylea?

Pharmaceuticals

- 1) How are decisions upon procurement of pharmaceuticals made?
- 2) How are decisions regarding what pharmaceuticals a doctor can prescribe made? Are there any guidelines for the clinic regarding this?
- 3) How does the budget for pharmaceuticals affect you?
- 4) How do you follow up on the budget and use of specific pharmaceuticals?

Staffing

- 1) How does the decision-making process regarding scheduling and staffing look like at the clinic?
- 2) How do you decide on how much time that should be scheduled for each patient?
- 3) How does the decision-making process regarding recruitment of personnel look like?

Materials, tools and apparatus

- 1) How does the decision-making process look like regarding procurements of new materials, tools and apparatus?
- 2) How do you work with efficiency for the use and access of materials, tools and apparatus?
- 3) How is the use and cost of specific materials, tools and apparatus followed up?
- 4) How do you make decisions regarding renewal of wrecked equipment?

Access and usage of financial and accounting information

- 1) Do you have access to the financial/accounting information that concerns your clinic?
- 2) How are financial aspects discussed between doctors or other professionals within the clinic?
- 3) How do you work with the balanced scorecard?
- 4) How do you follow up on the budget?
- 5) How can you influence financial aspects as for example the budgeting process?
- 6) How do you work to stay within budget?
- 7) What happens if the outcome of the budget is different from what was expected?

Commonly asked follow-up questions

- 1) Could you tell me a bit more about that, do you have a concrete example?
- 2) How do you mean...?
- 3) What did/ does that lead to?
- 4) How did that affect your decision-making?
- 5) Are you saying that your role as a doctor changed when...?
- 6) Would you say I that this applies to all doctors in the clinic?
- 7) Have I understood you correctly when I say...? (rephrase)
- 8) Could it sometimes be different from how you describe it now?