Foreword and Acknowledgements

We would like to extend our thanks to all the respondents who choose to participate in this study by allocating time and effort to be interviewed. We would also like to express our gratitude to our supervisor, Cecilia Lindholm, whose expertise and guidance facilitated the study and our peer reviewers who gave valuable feedback and comments. Without all your help this thesis would not have been possible. Accordingly, it is to them that it is dedicated.

Uppsala, May 2017

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Abstract

Purpose – In the wake of two processes of change, digitalization, and patient empowerment, the practice of direct-to-consumer telehealth has emerged. This paper studies the implementation and pricing process of direct-to-consumer telehealth in the Swedish public healthcare system. Direct-to-consumer telehealth is a new practice within healthcare worldwide. Therefore this paper aims to contribute to direct-to-consumer telehealth knowledge.

Design/methodology/approach – The paper is inspired by an inductive analysis approach to analyzing qualitative data. Qualitative data has been collected from four principle actors in the process of implementation and pricing of direct-to-consumer telehealth in Sweden, as well as six Swedish regions/county councils.

Findings – As no data was available for calculating the price on direct-to-consumer telehealth, the price was based on assumptions. It created low legitimacy of Region Jönköping County’s price and the process of the pricing. However, when SALAR presented its price on direct-to-consumer telehealth, it was also based on assumptions. This price had a great legitimacy, suggesting that legitimacy lies not in the method but with the actor.

Practical implications – Direct-to-consumer telehealth is a novel practice in healthcare, both in Sweden and worldwide. This paper suggests that the reimbursement model used for direct-to-consumer telehealth in Sweden created incitements for overproduction and high costs.

Originality/value – As a new practice, there is currently a lack of research on direct-to-consumer telehealth worldwide. This paper studies pricing in direct-to-consumer telehealth and legitimacy in inter-organizational relations.

Keywords – Legitimacy, Pricing, Digitalization, Reimbursement, Direct-to-Consumer Telehealth, Sweden

Paper type – Research paper
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1. Introduction

The latest decades have been characterized by two processes of change; digitalization and the well-informed and knowledgeable patient (Anderson & Funnell, 2005). This paper investigates a case where these two processes of change interacted and produced a new phenomenon in healthcare, direct-to-consumer telehealth, which then must be bestowed a value and a price-tag. Furthermore, this paper studies the legitimacy in the process of valuing public goods, and what might happen when a brand new digital phenomenon in healthcare clashes with older models of reimbursement. This study will also highlight how direct-to-consumer telehealth, due to the reimbursement model, created an inter-organizational relationship with poor legitimacy between three parts, the direct-to-consumer telehealth provider, Region Jönköping County and the patient’s home county, a relationship where the patient’s home county has a payment obligation but no possibility of control. By investigating direct-to-consumer telehealth implementation within the Swedish publicly funded healthcare system, this paper also aims to contribute to direct-to-consumer telehealth knowledge as the practice is still in its infancy worldwide, and there is yet not much research available on the subject (Ekman, 2017).

In practice, this paper studies the emergence and implementation of direct-to-consumer telehealth into the publicly funded Swedish healthcare system from December 2015 until May 2017 and the processes involved in bestowing it a value. As direct-to-consumer telehealth is in the early phase of its implementation worldwide (Ashwood et al., 2017), we believe direct-to-consumer telehealth implementation in Sweden is an interesting object to study, both from a theoretical, but also practical perspective.

1.1. Problematization

The breakthroughs in healthcare, combined with an increased living standard in the modern society, make for an increasingly older population in western societies (Anell et al., 2012). As the population is living longer and treatment-demanding illnesses are getting more common, Sweden and many other countries are struggling with healthcare expenses that are growing faster than GDP (McKinsey, 2016). In this context, it is perhaps more important than ever to pursue a more resource effective health care. One of the most recent emergencies in the wake
of digitization is the direct-to-consumer telehealth, in which a patient has access to a physician via telephone or video conferencing (Ashwood et al., 2017). Direct-to-consumer telehealth can be derived from two trends in healthcare, digitalization, and patient empowerment. Digitalization in society has transformed the exchange process between citizens and public service providers (Ranerup et al., 2016). In the wake of digitization, various e-services are becoming a tool for communicating and exchanging information without the necessity of a physical contact (Taherdoost et al., 2013). Digitalization strategies in healthcare are known as e-health (Eysenbach, 2001). One of the e-health strategies, telemedicine or telehealth, makes it possible to deliver healthcare over long distances by using telephone or internet services, especially beneficial to improve access to healthcare in rural areas (Yellowlees et al., 2008; Christensen & Hickie, 2010). Researchers also argue that telehealth can increase efficiency and quality in healthcare (see for example Venkatraman et al., 2008; Bush et al., 2009; Iveroth et al., 2013).

Patient empowerment, another trend in the healthcare environment, entails an increased possibility for the patients to influence their healthcare (Aujoulat et al. 2007). Empowerment is a process to increase one's ability to think critically and act autonomously (Anderson and Funnell, 2010). According to Aujoulat et al. (2007), patients want to self-manage their lives and illnesses. Hence, the patient empowerment trend helps patients obtain what they need and want (Anderson & Funnell, 2010). An increasing patient empowerment has changed the patient-provider relationships in healthcare (Aujoulat et al., 2007). Patient empowerment has spurred development of possibilities for patients to manage their healthcare, such as introducing the option to choose your own healthcare provider. The digitalization of society has, in turn, provided an environment for introducing new forms of healthcare, and one of the latest digital developments is direct-to-consumer telehealth, in which a patient has access to a physician via telephone or through video conferencing (Ashwood et al., 2017). Meeting a physician through a smartphone, or other devices fit well with how the modern citizen, and especially the younger generation, is used to interact and perform various tasks.

Swedish health care strives to be at the forefront with regard to quality and technological innovation (Iveroth et al., 2013). Sweden is also a pioneer country in telemedicine, starting in the 1920s with a remote reading of Electrocardiogram (ECG) signals at Sahlgrenska University Hospital in Gothenburg (Olsson & Jarlman, 2004), and Sweden has an explicit goal to be world leading in e-health in the year 2025 (Regeringskansliet, 2016). In late 2015, Region Jönköping
County introduced direct-to-consumer telehealth into it is publicly funded primary care. Regions and county councils in Sweden have a certain degree of freedom to develop their healthcare strategies, something that makes it possible for individual regions and county councils in Sweden to offer their solutions to delivering efficient healthcare. Direct-to-consumer telehealth in Region Jönköping County today is divided into two types of services, provided by different suppliers. There is a synchronous service, consisting of video conferencing with physicians, nurses, or other healthcare personnel. There is also an asynchronous service, consisting of patients describing data of their illness with words and digital pictures, data which then is studied by a physician who returns with the diagnosis within a couple of hours.

This paper studies the process of bestowing direct-to-consumer telehealth in Region Jönköping County a value, based on Fourcade’s (2011) argument that economic valuation processes in public enterprises are eminently contingent on politics, time period and social context. Ashwood et al. (2017) state that one of the attractions of direct-to-consumer telehealth is its potential to save money, but the direct-to-consumer telehealth practice in Region Jönköping County has been criticized as overpriced in media by physicians, regions /county councils and journalists (see for example Frostberg, 2016; Andersson et al., 2017; Hagnestad, 2017; Lehnberg, 2017; Zabin Tengmark & Lundin, 2017; Zillén, 2017). This suggests poor legitimacy of direct-to-consumer telehealth pricing. Since it is introduced in December 2015 until May 2017, direct-to-consumer telehealth in Region Jönköping County has been priced at 0 SEK, 2200 SEK, 1200 SEK and 650 SEK. Healthcare is what's known as public goods, non-commercial items which are not for sale and do not generate their revenues (Barton, 2004). If goods are not sold on a market, and no revenues are generated, the monetary value becomes complex to calculate. Therefore, in public enterprises, the pricing is obtained through laws, regulations, and political decisions (Olve et al., 2013). Thus Fourcade (2011) suggests that the valuation processes in public enterprises are contingent, which in turn have effects on legitimacy.

The reimbursement model used on direct-to-consumer telehealth has its roots in the 1950’s. This paper also studies the reimbursement model and the organizational relationships it creates. The way Swedish healthcare is organized, it was the reimbursement model that forced Region Jönköping County to put a monetary value on direct-to-consumer telehealth as the first patient living outside Jönköping County used the service. As long as it was used by the Jönköping
county population, direct-to-consumer telehealth was in intra-organizational relationship within Region Jönköping County. When patients living outside of Jönköping County started appearing, the reimbursement model made direct-to-consumer telehealth an inter-organizational relationship between the provider, Region Jönköping County, and the patient's home county council. Lindholm (2013) states that in order for efficient inter-organizational relationships governance must be perceived as legitimate by all actors. Communication between different groups of actors and hierarchical levels is key in creating intra and inter-organizational legitimacy (Lindholm, 2013; Petersson & Erlingsdóttir, 2016). The reimbursement models used in healthcare also has the possibility to influence the agent’s behavior by creating incentives or deterrents (Barnum et al., 1995). Accordingly, the reimbursement model for direct-to-consumer telehealth will influence the practice.

This study is one of the first steps to better understand the position and the value of direct-to-consumer telehealth in public healthcare. This paper aims to investigate how direct-to-consumer telehealth in Sweden has been implemented, priced, and reimbursed in order to understand the governance effect this has created on both legitimacy and agent behavior.

1.2. Research question

To study the process of how direct-to-consumer telehealth was valued in Swedish primary care, a research question has been formulated:

"What was the process behind pricing direct-to-consumer telehealth in Swedish primary care, and why was it perceived as overpriced by other regions and county councils?"

1.3. Aim of the study and practical importance

Digitalization is currently transforming healthcare practice all over the world. The importance of a resource efficient and well-working healthcare system in the modern society presents an interesting and equally important field of research. We also concur with Gastaldi & Corso (2012) in the view that important aspects of the e-health field are largely unexplored. The possible benefits of direct-to-consumer telehealth in healthcare, such as higher efficiency and improved accessibility, makes it relevant for research but so far there is limited research
available on the subject (Ekman, 2017). The aim of this study is to contribute with practical knowledge on the implementation and valuing the process of direct-to-consumer telehealth in Swedish healthcare. This study also aims to theoretical contribution regarding legitimacy in inter-organizational relations within the field of public healthcare governance.
2. Theoretical background

This chapter presents the theoretical literature that has been used as a frame of reference in this study. As direct-to-consumer telehealth is new as a phenomenon both in Sweden, also worldwide, the frame of reference has been extensive at the beginning of the study and then narrowed down during the process using the empirics collected. Below is presented the literature that was found to be relevant to this study.

2.1. Healthcare in the 21st century

2.1.1. Digitalization and patient empowerment

It is a tricky task to identify when one period of evolution ends, and another begins as new developments accrete and accumulate while old trends are still playing out and apparently flourishing (Dunleavy et al., 2006). One of the most interesting developments of late are the various e-services which are becoming valuable tools for communication and information (Taherdoost et al., 2013). In the last decades, computing has become one of the commonly used factors of society, and we are living in a new information age (Dwivedi et al., 2002). Starting with the digitalization of data, converting the analog signal to digital signals, movies, books, and much more are now digitized (Harrington, 2014). In the wake of digitization, e-services are becoming a valuable tool for communication and information by creating an electronic environment for human beings (Taherdoost et al., 2013). The internet has become a database packed with information in all areas, as well as with e-services. Digitalization generates a consumption of service without the necessity of a physical contact with a person or companies (ibid.). E-services can efficiently provide delivery of service and products, at the same also reducing the costs of the transaction (Taherdoost et al., 2013). Nowadays e-services are used by banks, travel agencies, governments, healthcare, education, books publishers, etc.

Digitalization in society has spurred momentum in the development and exploitation of different information systems and technologies in the exchange process between citizens and public service providers (Ranerup et al., 2016). Digitalization strategies in healthcare, also known as e-health (Eysenbach, 2001), bring opportunities for both productivity and efficiency gains. Many scholars believe that information systems investments in healthcare can contribute greatly to improved service quality, operational efficiency, patient satisfaction, patient care,
and has direct implications for service safety, quality, and cost (see for example Venkatraman et al., 2008; Bush et al., 2009; Iveroth et al., 2013). Electronic services may provide delivery of service and products efficiently, but also reduce the costs of transactions (Taherdoost et al., 2013). Iveroth et al. (2013) states that IT in health care could improve efficiency, patient care, and quality, and that the healthcare sector is lagging behind many industries when it comes to making strategic use of IT. Technology is an essential tool for e-health since it can prevent, diagnose, treat and follow the patient, saving costs to the healthcare system and improving efficiency (Christensen & Hickie, 2010). E-health encompasses different services and products for health, such as mobile applications, big data, wearable devices, information on the internet, video games, among others (ibid). On the whole, e-health technologies could have enormous benefits to decrease diseases (Christensen & Hickie, 2010).

Patient empowerment is also part of the developing healthcare environment (Aujoulat et al. 2007). Anderson & Funnell (2010) states that “Empowerment is a process when the purpose of an educational intervention is to increase one's ability to think critically and act autonomously.” Healthcare field recognizes the empowerment as the connection between patient-provider relationship (Aujoulat et al., 2007) and roles of patients and healthcare professionals (Anderson & Funnell, 2005). Aujoulat et al. (2007) suggest that the patient empowerment has two ambits for the process: an intrapersonal ambit and interpersonal ambit. Therefore, the patient empowerment must be perceived from the point of view of the patient alone or point of view of the patient-provider (ibid). Needs and psychosocial problems to deal with treatment and disease increase the skills in patients from an empowerment-based approach. Making patients self-selected changes concerning to nutrition, physical activity, weight (Anderson & Funnell, 2010). Aujoulat et al. (2007) suggest “to acknowledge self-efficacy as an important dimension of empowerment, implicitly defines patient empowerment as a process of behavior change.” Accordingly, patients want to self-manage their lives and illness the best way possible (ibid). Hence empowerment is helping patients to obtain what they need and want (Anderson & Funnell, 2010).

2.1.2. Telemedicine

One of the challenges in all organizational governance is to improve the efficiency of operations. Efficiency in healthcare can be described as “the health outcomes achieved per dollar spent” (Porter, 2010). Scholars argue that telehealth has many benefits for increasing
efficiency in healthcare, such as improving accessibility but also an opportunity for decreasing costs (Hjelm, 2005; Yellowlees et al., 2008; Christensen & Hickie, 2010; Parikh & Huniewicz, 2015). Haux (2006) suggests that computer systems in healthcare should improve opportunities for access to health and improve medical knowledge, thus improving the quality of service for patients. Parikh & Huniewicz (2015) argue that, through the internet, e-health has expanded the scope with access 24/7 and, perhaps more importantly, low costs. According to Christensen & Hickie (2010), Internet-delivered treatments for diagnoses such as depression, eating disorders or panic disorder are efficient, effective and have low cost. Telehealth services could also be helpful to patients who do not have access to basic treatments (Christensen & Hickie, 2010). Through telehealth service, patients can get information or therapy by telephone or the internet, especially beneficial for patients in rural populations (Yellowlees et al., 2008). Haux (2006) also highlights that the variety of new types of information system in the health system yields a better analysis and monitoring of patient data, as well as biomedical data. In this way, information systems can contribute to the development of health science and medicine, and computer science in general (ibid.). According to Hjelm (2005), there are some significant benefits of telemedicine such as reduced healthcare costs; improved access to services and increasing care delivery; information; provision of care not previously deliverable; improved access to information; improved professional education; quality control of screening programs. Dwivedi et al. (2002) state that telemedicine has reduced cost significantly.

The goal of telemedicine is to facilitate clinical care through the exchange of information at a distance. For this reason, telemedicine has some barriers or limitations for being operational, ethical and legal (Stanberry, 2000). Hu et al. (2000) argue that telemedicine has factors that affect its development, such as the factor of the technological attribute and the factor of the knowledge barrier. Among the barriers of telemedicine are the risks to the patient’s privacy, limitations in the experience and knowledge of health professionals to the use of new systems, legalization of health practices and the granting of licenses for their practice (Stanberry, 2000). Some opponents argue that it is an insecure practice, representing a threat in the relation of the traditional patient-doctor (ibid.). According to Stanberry (2000), among the risks of telemedicine is the risk of confidentiality and privacy focused on ethical and legal aspects. Telemedicine also faces problems of medical negligence, clinical risks related to distant patients, as well as clinical risks in telesurgery, such as teledermatology, telepathology, and teleradiology (ibid). The clinical risk of a misdiagnosis is crucial to consider in telemedicine, as it is also important to consider the risk of corruption or alteration of an image that will affect
the diagnosis (ibid.). Ashley (2002) suggests that some barriers in telemedicine can hinder the development of the health professional, such as patient privacy, professional and ethical considerations, requirements for multiple licenses and/or credentials and the professional malpractice liability. Another important factor is that the implementation is dependent on good IT infrastructure.

2.1.3. Direct-to-consumer telehealth

Taherdoost et al. (2013) state that through the implementation of telehealth, patients could be diagnosed and treatments prescribed without the need for a physical face-to-face medical visit. It has now become true and is now known as direct-to-consumer telehealth. Direct-to-consumer telehealth is an around-the-clock access, for minor illnesses, to a physician via telephone or video conferencing on their smartphone, tablet, or laptop (Ashwood et al., 2017). The patient only needs a computer/smartphone, internet connection and possibly a microphone and/or a webcam. Thus, patients can avoid time and travel costs (ibid.). Direct-to-consumer telehealth is rapidly growing in the United States, with a total of 1.25 million visits in 2015, and increasing annually (Ashwood et al., 2017). By using communications technology, patients can avoid time off work, travel and time costs and at the same time the healthcare provider can minimize cost by reducing waiting times, reception staff and improved flexibility. In this way, the direct telehealth consumer service has a low visit reimbursement compared to physician offices visits or emergency departments (EDs) visits (Ashwood et al., 2017). As direct-to-consumer telehealth in a recent phenomenon (Ashwood et al., 2017), the theory is so far not extensive. A search for peer-reviewed literature with the keyword “direct-to-consumer telehealth” or similar keywords in Stockholm and Uppsala library databases generated only a few articles, of which only one is relevant to this study. Ashwood et al. (2017) presented a study in March 2017 that investigates if direct-to-consumer telehealth does, in fact, decrease cost or if the convenience of direct-to-consumer telehealth may drive many patients to seek care for an illness who would not have sought care if telehealth had not been available. Ashwood et al. (2017) research argues that episode costs are lower through direct telehealth consumer, compared to physical visits or emergency visits, but increases utilization. By conducting a time spent analysis, taking into account travel time, total time in physical care including waiting time and time with physician, Ashwood et al. (2017) concluded that the clinic time for the average office visit was the same as the time spent on a telehealth visit, and that the only thing that is saved is the time spent on travelling. Ashwood et al. (2017) also concluded that direct-to-consumer telehealth did not
reduce overall spending, as the implementation of this new service increased the number of patients seeking care, thus increasing the number of hospital visits. Instead of replacing physical visits or EDs, this increased expenses by new utilization, i.e. increasing the number of new users. Therefore, Ashwood et al. (2017) conclude that direct to consumer telehealth increases access to care but does not reduce spending.

2.2. Governance and Legitimacy

2.2.1. Intra-organizational governance and legitimacy in healthcare

It is important in this context to understand that new technology, such as direct-to-consumer telehealth, is not a panacea, but merely a new tool. The real challenge in improving healthcare efficiency lies in governance and logistics. Bush et al. (2009) state that alignment of information systems with objectives and strategy has emerged as a critical issue in contemporary organizations. Traditionally the healthcare sector has focused on its primary business of patient care and has been reluctant to include strategic and management perspectives in its practice (Iveroth et al., 2013). The concept of healthcare governance is one of the most used for academics and scholars. Hence it is necessary first to define what governance in healthcare is. Frederickson et al. definition stated that “Governance refers to the lateral and inter-institutional relations in administration in the context of the decline of sovereignty, the decreasing importance of jurisdictional borders and a general institutional fragmentation (2015:235)”. On the other hand, Jon Pierre definition states that “governance refers to sustaining coordination and coherence among a wide variety of actors with different purposes and objectives (2000:3)”. These actors include non-governmental organizations, political institutions, civil society, interest groups and transnational organizations. As well Economic & Social Council (2006) respecting to public sector governance.

Nowadays, the relationship between governance and legitimacy has become a constant social concern, since issues related to the relationship between society, state and economy are involved. Abbott (2014) states that students in the professions have set aside inter-professional competence which, for a long time, has been a fundamental part of professional life and Kurunmäki (2004) argues that there is a struggle between existing professions and other professions to improve their positions in the social field and maintain their legitimacy. According to Zürn (2004), the concept of legitimacy has two perspectives. The first is from the
descriptive perspective that focuses on the social acceptance of political orders and political decisions, and the second is the normative perspective that refers to the validation of political decisions and political orders. Both claim legitimacy (ibid.). On the other hand, Bexel (2014) points out that *legitimacy is understood as a property attributed to an organization, policy or actor* (p. 291). Therefore Bexel (2014) points out that for the actors to comply with the rules and decisions legitimacy is necessary. According to Bexel (2014) to obtain legitimacy is through morality, charismatic leadership, legality, democracy and efficiency. On the other hand, Bexel (2014) mentions that the requirements of legitimacy differ according to the thematic areas and the forms of governance. Research stress that communication between employees and management is key to achieving planned system change (Berg, 2001; de Bruijn & van Helden, 2006; Petersson & Erlingsdóttir, 2016). If the users are not sufficiently involved in the design process, the user-interface may become illogical from the users’ point of view, and there is also the possibility of some groups of users having a political agenda embedded in the new system (Berg, 2001). To avoid this situation communication can be achieved through a variety of channels such as Intranet, workplace meeting, e-mail, informal conversation, meeting profession, social media, as well as teaching doctors to do patient inscriptions (Petersson & Erlingsdóttir, 2016)

### 2.2.2. Inter-organizational governance and legitimacy in healthcare

Legitimacy is also important in inter-organizational collaboration, or, in the case of direct-to-consumer telehealth, inter-organizational relations. In the last years, the requirements for the collaboration between the municipalities and the counties in Sweden have increased (Lindholm, 2013). The governance and responsibility for complex operations are managed politically and include different groups of actors with different responsibilities and functions (ibid.). Lindholm (2013) argue that there are acceptable arguments in favor of collaboration between healthcare organizations and suggests that the creation of conditions for groups of actors and different actors is an important factor in inter-organizational collaboration for creating efficiency and mitigating cracks in the system. Hence, it is of interest to develop forms of inter-organizational relationships and to learn from previous experience and mistakes (ibid.). Giddens´ structuration theory (1984:29) states that social practices within a company are closely related to three types of social structures: Signification structure, which acts as a communication interaction, Domination as an interaction of power, and Legitimation as the interaction of norms and values. Lindholm (2013:348-9) uses Giddens's structuration theory as
a reference and highlights two important principles for creating a well-functioning inter-organizational governance within healthcare.

First, governance must be perceived as legitimate and not predicted as a conflict with professional values and norms.
Second, governance must be understood by all actors and therefore be used in communication between different groups of actors and hierarchical levels.

Lindholm (2013) argues that collaboration cannot be imposed and therefore it is key within healthcare to create preconditions and to develop techniques and methods for highlighting the value of collaboration between different actors and groups.

2.3. Pricing in healthcare

As direct-to-consumer telehealth became a reality in Swedish healthcare, it needed to be valued and priced. However, how do we measure what things are worth? Fourcade (2011:1721) states that “economists offer two simple answers: first, money is a good enough metric for the “utility” we get from commodities; second, consumer behavior, for example, what people are willing to pay.” According to economic theory, commodities are basically worth their market price. This approach may work fine for products such as apples or bicycles, but how do we handle goods that are kept outside of markets, either because they cannot be physically alienated or because we have moral issues with the exchange process? Primary care, such as direct-to-consumer telehealth, is what's known as public goods. Barton (2004) defines public goods as non-commercial items which are not for sale and do not generate their revenues and state that provision of public goods is more efficient if provided by the government on a collective basis than if private firms in commercial markets provide it. If goods only can be received through the collective provision and no revenues are generated, the monetary value becomes complex to calculate as there is no market (Fourcade, 2011). It has not prevented economist from trying though. Fourcade argues that “modern social institutions spend considerable time and effort measuring what seems unmeasurable and valuing what seems beyond valuation” (2011:1723). In fact, we do it informally in our everyday lives (Fourcade, 2011). In the case of the public enterprise, the pricing is obtained through laws, regulations and political decisions (Olve et al., 2013). It suggests that economic valuation processes in public
enterprises are eminently contingent on politics, time period and social context (Fourcade, 2011).

2.4. Reimbursement

2.4.1. Effects of reimbursement in healthcare

Reimbursement models are also important factors in the success of implementing any new healthcare system, as reimbursement models have the power to influence the behavior of agents. The mode of payment chosen creates incentives affecting provider behavior and the efficiency, equity, and quality of healthcare (Barnum et al., 1995). Before we immerse ourselves further in reimbursement models, we would just like to emphasize that economic incentives are not the only factors influencing the behavior of the medical profession. Other factors to be mentioned are for example professional pride, virtue, regulations and even patient behavior (Frølich et al., 2007). The discussions concerning efficient methods of financing and reimbursing healthcare has been going on for several years, and the interest in healthcare reimbursement models does not seem to decrease, as illustrated by the ever-increasing amount of literature available (Lindgren, 2014). The importance of this discussion cannot be underestimated as the choice of performance measures is one of the most critical challenges facing any organization (Ittner & Larcker, 1998). Scholars agree that rigorous, disciplined performance measurement and improvement of value is one of the most important tools available to improve the organization’s efficiency, effectiveness, and drive system progress (see for example Ittner & Larcker, 1998; Porter, 2010). Unfortunately, there is no optimal or superior reimbursement model in healthcare (Barnum et al., 1995) and this might explain the variety of them. Porter (2010) argues that most providers fail to provide and measure value due to flaws in the current organizational structures and the information systems of health care delivery. The value in many reimbursement models are based on the volume of services delivered (inputs) and not achieved outcomes (results) where the real value is created (ibid.). Limitations in performance measurements might lead to “game playing” or strategic behavior and therefore to production-on-paper rather than professionally relevant production. The more perverse effects performance measurement creates, the less effective it may become (de Bruijn & van Helden, 2006).
2.4.2. Reimbursement models in primary care

Reimbursement models in healthcare can roughly be separated into two opposing groups, fixed reimbursement, and variable reimbursement. Fixed reimbursements offer the principal goods financial control, at the cost of incitements for the agent to improve productivity, while variable reimbursement offers the opposite, high incitements for productivity at the cost of financial control (and sometimes efficiency) (Lindgren, 2014). These models can then be combined in various ways in order to take advantage of the benefits and mitigate the drawbacks of each model (ibid.).

2.4.2.1. Fixed annual allocations - Capitation

Fixed annual allocations are a traditional funding of public management. A fixed amount is allocated to cover the operating costs for a given time period. The benefits are a good economic control for both the principal and the agent. The main drawback is the lack of direct performance relation (Lindgren, 2014). Capitation a variance of fixed allocation and is the main reimbursement model used in Swedish primary care (Lindgren, 2014). In a capitation model, the fixed allocation is based upon the number of patients “listed” or registered by a specific care provider (ibid.). The registration might be out of geographical reasons or other factors. To compensate for differentiation in healthcare need within different age groups and/or socio-economic groups, the capitation model is often combined with tweaks in compensation based upon statistical analysis of registered patients, for example, the Adjusted Clinical Groups (ACG) model. This model is a measurement instrument based on comorbidity and diagnostic resources (SALAR, 2014). The ACG system consists of assigning to each person a single category considering their gender, age, comorbidity, for a set period (ibid.) In Swedish primary care, as a result of the increase in the aging of the population, the problem of comorbidity has arisen, thus increasing the risk of mortality (Zielinski et al., 2012). According to Zielinski et al. (2012), one of the ways to measure comorbidity in the PHC is through ACG reimbursement model. The ACG reimbursement model is used in many countries and the majority of Swedish county councils (SALAR, 2014). The advantages of ACG are: It identifies patient and patient groups with great care; provides comparability between county health centers and councils; adapt the design of care to the composition of patient groups, and it's hard to manipulate for individual health care providers (SALAR, 2014). At the same time, there are also the risks of ACG reimbursement model, such as the risk of not accurate or registration of the diagnosis are not accurate therefore the diagnosis can be affected negatively, either through cheating or
manipulation (SALAR, 2014). On the other hand, Zielinski et al. (2009) point out that any incomplete record of data or a false record can be a source of bias in results, caused by manipulation or deception. Capitation also has the similar benefits and drawbacks as fixed allocation, where both the principal and the agent have good economic control, but lacks incentives to increase production or lower costs. The agent lacks the incentive to reduce cost or increase production, as this might lead to reduced funding for the next period. There is also a risk of agents remitting expensive cases to other care providers to avoid the cost (Lindgren, 2014).

2.4.2.2. Activity- or performance-based reimbursement models

Activity-based or performance-based financing is an example of New Public Management (NPM), and it was introduced in Sweden at the beginning of the 1990s (Kastberg & Siverbo, 2007). In activity-based or product-based reimbursement model, payment is based upon the volume of products delivered. Each activity or product is priced based on average cost, and the principal reimburses the care provider according to the activities or products reported. The benefits are clear incentives for productivity, as the agent is getting paid for every new activity undertaken, but also efficiency, as the agent is allowed to make profits which can be used for investments or other activities. The main drawback is the lack of cost-control for the principal as the agent has an incentive to “overproduce” certain activities, but also the risk of agents avoiding expensive cases, or, intentionally or unintentionally, reporting wrong types and number of activities (products). Product-based reimbursements models also exhibit some evidence of agents practicing “cream-skimming,” an avoidance of expensive patients (Friesner & Rosenman, 2009).

Product-based or P4P models are getting increasingly popular within healthcare (Lindgren, 2014). P4P is an attempt to mitigate negative effects of other models, but also a way to influence agent’s behaviors. In P4P models, the principal rewards or penalize certain activities which theoretically should affect how the agents behave (Barnum et al., 1995). Rewards could be based on, for example, patient satisfaction, waiting times or financial targets. The rewards can also be targeting specific parts or the agent's organization, such as doctors, units, or entire hospitals. P4P can be based upon either positive (rewards) or negative feedback (penalties). The rewards (or penalties) can also be based on both specific targets or relative targets, where the agent’s performance is compared and related to other agents. The Performance Based
Reimbursement (P4P) model is an incentive model for quality, payment for what has been achieved according to some standards. According to Pearson et al. (2008), the focus of the payment model for performance (P4P) is to improve the quality of care, but there are few studies that support the model's effectiveness. Studies on effects of P4P reimbursement model have yielded that P4P can potentially be effective. However, studies also found some evidence of unintended consequences, such as risk selection (Shen, 2003; Eijkenaar et al., 2013). Eijkenaar et al. (2013) therefore conclude that there is insufficient evidence to support or not support the use of P4P. A further complicating matter is that the studies lack any data regarding the long-term effects (ibid.).

One of the main drawbacks of product-based reimbursement is the incentive for overproducing healthcare. As every action is reimbursed, the agent has an incentive to produce as much as possible, even beyond what is needed. Catasús & Grönlund (2005) argue that if the measurements are in the hands of agents, the principals might lose power to the agents (also known as adverse selection in agency theory). This situation could lead to a situation called “supplier induced demand” (Barnum et al., 1995). Barnum et al. (1995) therefore argue that unregulated fee-for-service reimbursement should be avoided due to the cost-escalating incentives. To avoid this situation, product-based reimbursement can be combined with fixed limitations on production, if the limitations are surpassed, the marginal reimbursements are decreased (Lindgren, 2014).

2.5. Summary of theoretical framework

Digitalization combined with patient empowerment has spurred new developments in healthcare, direct-to-consumer telehealth being one of them. The introduction of e-services such as direct-to-consumer telehealth in Swedish healthcare has entailed new forms of inter-organizational relations. For efficient inter-organizational relations in healthcare two traits are highlighted: First, governance must be perceived as legitimate and not predicted as a conflict with professional values and norms. Second, governance must be understood by all actors and therefore be used in communication between different groups of actors and hierarchical levels. Collaboration cannot be imposed, and therefore it is key within healthcare to create preconditions and to develop techniques and methods for highlighting the value of collaboration between different actors and groups.
As direct-to-consumer telehealth was introduced in Swedish healthcare, society formulated a demand for valuing the service. As healthcare is public goods, there is no market, other methods of values are used. These methods are contingent on politics, time period and social context. Reimbursement models also influence healthcare governance. The way healthcare is reimbursed incitements or deterrents for certain practices, thus influence the way the agent behaves. Reimbursement models in healthcare can roughly be separated into two opposing groups, fixed reimbursement, and variable reimbursement. Fixed annual allocations give both the principal and the agent good economic control, but lacks incentives to increase production or lower costs. The benefits of P4P-models are incentives for productivity but also efficiency, as the agent is allowed to make profits which can be used for investments or other activities. The main drawback for the principal is the incentive for agents to overproduce healthcare.

Figure 1. Theoretical framework of study
3. Method

3.1. Research design

The aim of this paper was to understand how direct-to-consumer telehealth was implemented and priced in Region Jönköping County primary care. A case study was selected as case studies are suitable when the study is aiming to explain a "how" or "why" question (Saunders et al., 2016). With a case study, it is possible to collect a comprehensive amount of information regarding the case and to develop an in-depth analysis (ibid.). A case can refer to many things, but for this study, it is defined as the implementation and pricing process of direct-to-telehealth in Region Jönköping County primary care. With a single case study, it is possible to focus on a single case and study it in detail (Saunders et al., 2016).

As the digital patient is still in its infancy, this study is based upon an inductive approach. According to Bryman & Bell, “Analytic induction is an approach to the analysis of data in which the researcher seeks universal explanations of phenomena by pursuing the collection of data until no cases that are inconsistent with a hypothetical explanation (deviant or negative cases) of a phenomenon are found” (2015:583). To understand a new field of research, such as direct-to-consumer telehealth, the area must be approached with an open mind. Therefore, to gain an understanding of how direct-to-consumer telehealth was implemented and why it was perceived as overpriced, we believe a qualitative study is suitable for collecting data regarding personal experiences, opinions, and feelings towards this new phenomenon. Therefore, to answer the research question, a qualitative study has been chosen over a quantitative. A quantitative study at this stage would struggle to generate the data needed to understand the digital patient’s role within Swedish healthcare, as the practice is fairly new and sufficient data is not available.

According to Kaplan & Maxwell (2005), “the goal of qualitative research is understanding issues or particular situations by investigating the perspectives and behavior of the people in these situations and the context within which they act” (2005:30). The study is inspired by a grounded theory approach (Bryman & Bell, 2015), as collected data has been continuously evaluated to guide the study’s direction. Grounded theory is defined by Corbin & Strauss as “theory that was derived from data, systematically gathered and analyzed through the research process. In this method, data collection, analysis, and eventual theory stand in close
relationship to one another” (2008:12). Grounded theory is developed during the actual investigation, and is realized using the constant connection between the data collection and the analysis (Strauss & Corbin, 1994). In this study, the theory has been continuously added and/or removed during the process as a result of the empiric data that is found. The qualitative research design according to Kaplan & Maxwell (2005) is primarily inductive, and implies a substantial flexibility, for two reasons. The first reason is that the goals, the stakeholders, and the processes of study undergo continuous change and therefore the study may undergo some necessary changes (ibid.). The second reason is that qualitative research is inductive because the evaluation usually goes through similar cycles of analysis and data collection, so from the data can induce hypotheses inductively (Kaplan & Maxwell, 2005).

This study started with two questions: why was Region Jönköping County the county in Sweden with the clear majority of direct-to-consumer telehealth visits in primary care, and why is direct-to-consumer telehealth in Swedish primary care criticized for being overpriced? The conducted research can, therefore, be separated into two main phases: Phase 1 was to investigate and understand the processes behind the implementation and the pricing of direct-to-consumer telehealth in Region Jönköping County primary care. As this data was paramount to answer the second part of the research question and was not sufficiently available (and/or reliable) in secondary data, this data was collected by interviewing key respondents in Region Jönköping County and the primary care centers. Phase 2 was to use the data from Jönköping County to understand the inter-organizational relationship between Region Jönköping County and the other regions and county councils in Sweden. Empiric data regarding interregional / inter-county council relationships was then collected by interviews with Region Västra Götaland, Region Skåne, Stockholm County Council, Region Uppsala, Sörmland County Council and Region Norrbotten. The data collected during this second phase pointed towards a study of legitimacy.

3.2. Primary data
Primary data is collected by the researchers directly from first-hand experience and various methods for collecting it exist (Jacobsen, 2002; Bryman & Bell, 2015). The primary data used in this study is collected from semi-structured interviews conducted by the authors. Interviews have been chosen because the possibility for follow-up questions offer an opportunity to generate deeper insight than, for example, surveys. By interviewing key respondents, it is
possible to obtain qualitative data regarding both their personal specific experiences, views, and feelings towards the changes within healthcare, and the introduction of direct-to-consumer telehealth, but also of the organization as a whole. By giving the interview a certain degree of freedom, semi-structured interviews offer a possibility to interact with the respondent and gain a deeper insight into his/her interpretations, experiences, and thoughts (Mason, 2002).

3.3. Secondary data
Data collected by someone else, and/or for a purpose other than the current one, is secondary data. In secondary data, the researcher does not collect the information first hand but instead bases research on other available information (Jacobsen, 2002). The secondary data in this study consists of public documentation. Primarily, documentation from Region Jönköping County concerning healthcare and the digital patient meeting in primary care has been used, but also the official web pages of the direct-to-consumer telehealth providers (Kry.se and MinDoktor.se) have been used for collecting empirics, as they chose to not participate in any interviews. Finally, a study of media articles has been used for research before the design of the study and for gathering a basic understanding of the implementation process in Region Jönköping County. Media has also been used for identifying some of the significant actors/respondents for interviewing; persons that due to their position have relevant experience or knowledge of specific areas or phases of the direct-to-consumer telehealth implementation in Sweden. In large organizations such as regions or county councils, finding respondents with the right knowledge was an important part of conducting this study.

3.4. Triangulation
Using two, or more, separate sources of data will contribute to a triangulation of data (Farquhar, 2012). Multiple perspectives converging on the phenomenon under investigation can reduce bias and increase validity (ibid.). The use of more than one method might compensate for any inherent weaknesses in any single method. This research has been designed to use multiple sources of data. The study will be based upon interviews, but public documentation from Region Jönköping County and media articles will help to support or oppose the data collected from interviews. For example, secondary data, such as direct-to-consumer statements found in media, has been checked with primary data collected by the authors.
3.5. Sample selection

To understand the process and forces involved when direct-to-consumer telehealth first was introduced to public healthcare in Sweden, a study of media articles was the starting point. Articles from 2015 - 2017 were scanned for clues and key players. The key organizations were identified as Region Jönköping County, Bra Liv health centers, Wetterhalsan health center, Läkarhuset i Tranås health center, Kry.se (owned by Webbhälsa AB), and MinDoktor (owned by MD International AB). Region Jönköping County was the first region in Sweden to grant the digital and the physical patient meeting within primary care an equal status. Bra Liv health center, a group of health centers, owned and managed by Region Jönköping County, was the first health center in Sweden to introduce the digital patient meeting in primary care. The privately owned, but publicly funded, health centers Wetterhalsan and Läkarhuset i Tranås also introduced direct-to-consumer telehealth by using sub-contractors Kry.se and MinDoktor, once the digital patient meeting was accepted in Region Jönköping County; MinDoktor as a subcontractor to Wetterhalsan and Kry.se as a subcontractor to Läkarhuset i Tranås. Finally, to understand the relationship between Region Jönköping County and other Swedish county councils, ten regions/county councils were contacted, along with the Swedish Association of Local Authorities and Regions (SALAR) as the superintendent on a country level.

3.6. Respondent selection

As one of the phases of this study was to understand how Region Jönköping County became the first county council to offer direct-to-consumer telehealth to the general public, and how it was priced, interviewing representatives from Region Jönköping County was crucial. Jonatan Vincent, controller at Region Jönköping County, was identified as the most prominent respondent in media articles concerning direct-to-consumer telehealth. Ulf Österstad, operations manager at Bra Liv Nära, was identified as one of the key persons in designing and implementing the first ever direct-to-consumer telehealth service in publicly funded Swedish healthcare. The first privately owned health center to offer direct-to-consumer telehealth to the general public, Wetterhalsan, was represented by Mats Siljehult, operations manager. The other privately-owned health center in Region Jönköping County that is offering direct-to-consumer telehealth to the general public, Läkarhuset i Tranås, did not respond to multiple attempts to contact. Läkarhuset i Tranås’ affiliated supplier of direct-to-consumer telehealth, Kry.se, declined to participate in this study, and Wetterhalsans affiliated supplier, MinDoktor, did not
respond to multiple invitations. As many regions and county councils are indecisive on how to handle, classify and reimburse the digital patient meeting in primary care, SALAR has been tasked with, as soon as possible, presenting a proposal for guidance. Media articles were used to identify an appropriate SALAR- representative involved in, at time of this study, the ongoing process. Finally, media was scanned for identifying Swedish regions or county councils that had publicly criticized direct-to-consumer telehealth in Region Jönköping County. This scan generated Region Skåne and Sörmland County Council. Stockholm County Council, Region Uppsala and Region Västra Götaland were chosen due to the large rural population; populations that both media and Region Jönköping County statistics suggest are the predominant users of direct-to-consumer telehealth. Finally, to collect data from Swedish rural regions and county councils, four were contacted with only one reply, Norrbotten. All requests to regions or county councils, except Jönköping, were directed to the health director or the commercial director who then chose to participate by themselves or refer us to an appropriate respondent. All the respondents in this study were contacted by the use of telephone and/or e-mail.

3.7. Interview execution

The interviews were all performed via telephone with the exception of two: Region Jönköping County and Stockholm County Council. Stockholm County Council was interviewed on site in Stockholm and Region Jönköping County, as a key foundation of the planning of the study, was also interviewed on site in Jönköping and had a duration of 120 minutes. With the exception of Region Jönköping County, the interviews varied in duration from about 15 to 60 minutes due to the time slots we were granted. An overview of the interviews is found in Table 1. The interviews were recorded, by consent of the respondent, and later transcribed by the authors. The respondents were then given an opportunity to read and comment before the data was used. The interviews and the interview template were based around four main topics: the place of direct-to-consumer telehealth in healthcare, the direct-to-consumer telehealth implementation process, direct-to-consumer telehealth pricing, and direct-to-consumer telehealth reimbursement models. As the interviews were semi-structured, the respondents had the opportunity to elaborate on the topics, and follow-up questions could then be formulated in response to the respondent's answers. The questions were given in advance to SALAR and all participating county councils in order for these large organizations to identify a respondent with the appropriate knowledge. The questionnaire template can be found in Appendix 1.
Table 1: List of respondents.

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Position/title</th>
<th>Organization</th>
<th>Interview type (length)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulf Österstad (U.Ö.)</td>
<td>Operations manager</td>
<td>Bra Liv Nära</td>
<td>Telephone 60 minutes</td>
<td>20170410</td>
</tr>
<tr>
<td>Jonatan Vincent (J.V.)</td>
<td>Controller - primary care</td>
<td>Region Jönköping County</td>
<td>Personal 120 minutes</td>
<td>20170411</td>
</tr>
<tr>
<td>Mats Siljehult (M.S.)</td>
<td>Operations manager</td>
<td>Wetterhälсан</td>
<td>Telephone 15+15 minutes</td>
<td>20170405 &amp; 20170423</td>
</tr>
<tr>
<td>Agneta Rönn (A.R.)</td>
<td>Senior Adviser</td>
<td>SALAR</td>
<td>Telephone 30 minutes</td>
<td>20170427</td>
</tr>
<tr>
<td>Joakim Björck (J.B.)</td>
<td>Financial director</td>
<td>Region Västra Götaland</td>
<td>Telephone 30 minutes</td>
<td>20170510</td>
</tr>
<tr>
<td>Lars-Åke Rudin (L.R.)</td>
<td>Financial director</td>
<td>Region Skåne</td>
<td>Telephone 30 minutes</td>
<td>20170511</td>
</tr>
<tr>
<td>Marie Johansson (M.J.)</td>
<td>Controller and financial officer - board of health</td>
<td>Region Uppsala</td>
<td>Telephone 30 minutes</td>
<td>20170512</td>
</tr>
<tr>
<td>Sofia Öberg (S.Ö.)</td>
<td>Project leader - primary care video development</td>
<td>Stockholm County Council</td>
<td>Personal 30 minutes</td>
<td>20170515</td>
</tr>
<tr>
<td>Mats Henningsson (M.H.)</td>
<td>Operations manager - primary care digital development</td>
<td>Sörmland County Council</td>
<td>Telephone 30 minutes</td>
<td>20170516</td>
</tr>
<tr>
<td>Brita Winsa (B.W.)</td>
<td>Division manager - primary care</td>
<td>Region Norrbotten</td>
<td>Telephone 30 minutes</td>
<td>20170517</td>
</tr>
</tbody>
</table>

3.8. Data coding

The purpose of Coding in qualitative research is to select particular segments of data, to place them into categories that benefit the comparison, understanding, and development of the theory (Kaplan & Maxwell, 2005). Kaplan & Maxwell (2005) argues that the most important principle of qualitative data collection is that all data is potential data. The evaluator does not restrict or use formal rules to determine which data is irrelevant or inadmissible (ibid.). To investigate the first part of the research question, “What was the process behind pricing direct-to-consumer telehealth in Swedish primary care,” both authors analyzed data collected from Region Jönköping County, Wetterhälсан, Bra Liv Nära and SALAR and systematically mapped out in order of events. To answer the second part of the research question, “why was it (direct-to-consumer telehealth) perceived as overpriced by other regions and county councils?”. The data from county council interviews was analyzed and coded by the authors separately, to prevent any bias, and then compared and combined. The data was analyzed and coded under the topics of the legitimacy of direct-to-consumer telehealth, the legitimacy of the process and legitimacy of reimbursement.
3.9. Research ethics

The research has been performed under the ethical guidelines of The Swedish Research Council. All respondents were informed of the purpose of the interview, their freedom to participate on their will and the ethical guidelines of the study. The respondents were informed about the recording of the interview and were given the opportunity to read and comment on the data before it was used. All data was handled confidentially and kept only for use during the study. The respondents were also given the opportunity to remain anonymous if they so wished.

3.10. Source criticism

According to Corbin & Strauss (2008) there are some characteristics of a grounded theory to consider, such as: the ability to think abstractly; the capacity to step back and critically analyze situations; the capacity to be flexible and open to helpful criticism; the capacity to recognize the tendency toward bias; devotion to the work process and a sense of absorption; sensitivity to the words and actions of respondents. Therefore Pope et al. (2000) point out that it depends on the vision, integrity, and skills of the researcher to obtain a good quality analysis of qualitative data. We are aware that the data collected is possibly distorted by the respondent’s bias. There is a risk that we were not able to collect and interpret the data correctly, due to either a lack of communication from the respondent or the researcher’s lack of ability to accurately collect and interpret the information. To assess the trustworthiness of qualitative research, Bryman & Bell (2015) identify four main criteria: credibility, transferability, dependability, and confirmability - elaborated on below.

3.10.1. Credibility

In order to perceive the study as credible, the reader must accept the researcher's description of reality (Bryman & Bell, 2015). To create credibility, it is important to perform the study according to rules and guidelines and to present respondents and peer reviewers the opportunity to read and confirm or reject the researcher's description of reality (ibid.). In this study, multiple peer reviews have been ensured by fellow students, and a supervisor and respondent validation of data have been practiced.
3.10.2. Transferability and Dependability

Qualitative studies normally involve an intense study of a small sample. Therefore, qualitative studies in general, as opposed to quantitative studies, focus on depth and not width (Bryman & Bell, 2015). In this case, the transferability of this study is derived from the limited sample group, and the findings cannot be applicable. Dependability of a study is derived from the ability to survey and evaluate the entire study process (Bryman & Bell, 2015). In this case, the study has been reviewed on multiple occasions by two fellow students along with one supervisor.

3.10.3. Confirmability

In a qualitative study, it is impossible to confirm that all aspect of the study is one hundred percent correct, but it is possible to confirm that the study is performed in good faith (Bryman & Bell, 2015). This study has been performed with the intent and the will to not let our personal values and feelings interfere.

3.11. Limitations

This case study studies one specific implementation of direct-to-consumer telehealth, and therefore it does not represent the implementation of direct-to-consumer telehealth on a general basis. Therefore, the evidence in this study is of interest to understand the case of direct-to-consumer telehealth in Swedish healthcare, but must be used with caution if applied to other cases of direct-to-consumer telehealth implementation. This study also did not take into consideration data from all Swedish county councils, suggesting that some important data might have been left out of this study. We instead argue that this study must be combined with further studies to gain a better knowledge of direct-to-consumer telehealth in healthcare.
4. Empirics

4.1. A background in Swedish healthcare

4.1.1. Healthcare in Sweden

This paper concerns healthcare within Sweden. To be able to understand the discussions in this paper, one must have some basic knowledge of the Swedish healthcare system. Sweden has known as one of the most advanced countries in the world regarding the provision of taxpayer supported public services (Ranerup et al., 2016). The Swedish health system is based on three principles; the principle of need and solidarity, the principle of human dignity, and the principle of cost-effectiveness (Anell et al., 2012). Healthcare is primarily funded by public means, and only 4% of inhabitants hold a private medical insurance or voluntary health insurance (VHI) (Anell et al., 2012). The national government in Sweden is responsible for the overall healthcare policies and the supervision of all healthcare, but in 1982 a new act handed over responsibility for the planning and provision of healthcare services from national government to the county/regional councils1. There is currently 20 counties, and regional councils in Sweden and each county or regional council is responsible for providing and funding health care for its population (Health and Social Care Act, 1982). The local governance of healthcare by county or regional councils induces a huge variance and an extensive amount of models used in healthcare (Jacobsson & Lindvall, 2009; Lindgren, 2014). To mitigate some of the adverse effects of this variance for patients, a new patient’s law (Patient Act, 2014) entered into force on January 1st, 2015 which gave patients the right to seek healthcare anywhere in Sweden, even outside of their home county if better care was available in another county. When a patient needs care, this patient has the right to receive immediate care, and if he/she needs specialized care, he/she will be referred to a specialized health center (Vårdguiden, 2017). The attention can be received in the county or region that he/she is registered as well as in another place. In this way, the patient can choose a fixed health center, choose a family doctor, and be treated by the same doctor. If he/she is not satisfied, he has the right to change or choose another health center throughout the territory of Sweden (ibid.).

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1 However, Sweden’s 290 municipalities are responsible for non-emergency care for the elderly and disabled.
Sveriges Kommuner och Landsting or in English the Swedish Association of Local Authorities and Region (SALAR) is a politically directed organization representing the interests of professionals, government, and employers throughout Swedish territory (SALAR, 2017). SALAR has as members all municipalities, regions, and county councils. The function of SALAR is to assist the regions and support county councils by acting as a network for coordination and information exchange, for example signing collective agreements, as well as represent and advocate on issues of interest to its members in the parliament, government, and government agencies (SALAR, 2017).

4.1.2. Primary care

This paper studies the implementation of direct-to-consumer telehealth in Swedish primary care. Primary care handles outpatient contacts and is the place of the first contact for most patients in day-to-day healthcare. Typically this provider acts as the principal point of continuing care for patients within the healthcare system, and primary care providers typically have no capacities of inpatient care. In Sweden, primary care can be provided by publicly owned or privately owned caregivers; the forms are regulated in Freedom of Choice System Act 2008. The county councils must ensure freedom of choice within primary care, as it is mandatory (Konkurrensverket, 2017). In Swedish primary care, patients pay a small patient’s fee for every visit, around 200-300 SEK\(^2\). Besides this small fee, a fee varying from county to county, the caregiver is also reimbursed by the county, typically by capitation based on listed patients (Lindgren, 2014). The Swedish patient is also financially covered by the county, as the patient is only required to pay patients fees in public healthcare up to a maximal amount, varying from county to county, but around 1100 SEK during a twelve months period (Vårdguiden, 2017). Swedish primary care has, however, been plagued with poor accessibility as can be illustrated with World Health Organization (WHO) statistics (See figure 2 & 3). Sweden is ranked amongst the highest in physicians per 100 000 inhabitants, but WHO estimates the number of outpatient contacts per person and year in Sweden as dramatically lower than similar countries (WHO, 2017).

\(^2\) Children under the age of 18 is exempt from patient’s fees. In some regions / counties even up to the age of 20.
4.1.3. Direct-to-consumer telehealth in Sweden

In Sweden, there are two versions of direct-to-consumer telehealth produced in Region Jönköping County currently active in primary care. There is an asynchronous model, where the
patient submits digital pictures and/or descriptions which a physician then studies and return with a diagnosis, or the synchronous variant where the physician and patient meet face to face through a video conference call.

4.2. Episode 1. October - November 2015. Direct-to-consumer telehealth is introduced in Region Jönköping County.

4.2.1. Episode 1 empirics

In late summer 2015, the directors of Region Jönköping County tasked the public primary care providers Bra Liv (Good Life) with improving access to primary care (U.Ö.). The background was an increased strain on the emergency departments within the council, due to limitations in access to primary care (U.Ö.). Ulf Österstad was put in charge of coming up with ways to improve primary care access and started looking at options. Among the options was direct-to-consumer telehealth that had been a trend in the United States of America, but in Sweden was almost non-existent (U.Ö.). Ulf Österstad elaborates on why direct-to-consumer telehealth became considered as the best option:

“It was clear to us that direct-to-consumer telehealth was the superior option, as the cost was almost zero and the scalability was enormous” (U.Ö)

In early October 2015, only a few weeks after he was given the task, Ulf Österstad presented the idea of direct-to-consumer telehealth to his head of development (U.Ö.). Ulf Österstad’s head of development then asked him if it was possible to have it up and to run by December 1, 2015 (U.Ö.). Ulf Österstad elaborates on the dialogue that followed:

“That is almost impossible,” I said. He then asked me “is it almost impossible or is it impossible?” I replied, “it is almost impossible.” “Good,” he said, “then I want you to do it.”
In October 2015, Bra Liv opened the first fully digital primary care center in Sweden, Bra Liv Nära (Good Life Near), offering digital access to primary care\(^3\) for primarily Bra Liv’s listed patients (U.Ö.). Ulf Österstad elaborates on the short time frame of implementation:

“What we later realized is that the time factor was key to that we got up and running and didn’t get stuck in the process. When we had such short time-period I could "fly under the radar” in an entirely different way.”

Region Jönköping County management had also explicitly expressed that they wanted results before the end of the year and Ulf Österstad states: “it was a little bit bold to have Bra Liv Nära up and running by December 1: st.”

As Bra Liv Nära started, operating Region Jönköping County was forced to decide on how to handle and reimburse this new phenomenon. The officials handling reimbursement in Region Jönköping County argues that if direct-to-consumer telehealth is okay or not should not be decided by economist but by profession (J.V.). The profession decides if this is a part of the commission and if this qualifies as quality healthcare, and they had done that since they were now using it (J.V.). If direct-to-consumer telehealth was to be considered legitimate, Region Jönköping also needed to decide on a value of this service. Was it to be considered to be equal to medical advice\(^4\) or is it equal to healthcare? Region Jönköping County decided that this be equal to healthcare as a physician makes an assessment, prescribes medication, diagnostic investigations, all the daily tasks of a physician in traditional physical healthcare (J.V.). Jonatan Vincent also elaborates on other pressures present when the reimbursement decision was to be taken:

“It was a little bit difficult to say that this practice was not okay, as the county council for many years had argued that this is the way forward. The county council wanted initiatives, gladly within e-health, it is stated in our primary care commission.”

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\(^3\) This includes not only digital access to physicians, but today also to physiotherapists, psychologists, counselors and other medical personnel.

\(^4\) Medical advice is not reimbursed by county councils in Sweden.
Region Jönköping County also states something that it is important to remember, that the discussion if direct-to-consumer telehealth was to be considered healthcare or not, wasn’t an issue with Bra Liv Nära. Bra Liv Nära was primarily only used by Jönköping County residents, and Bra Liv Nära’s direct-to-consumer telehealth, therefore, is reimbursed by capitation (J.V.). With capitation reimbursement, the primary care center is handed a sum of money based on their listed patients, and it is their privilege to treat their patients as efficiently as possible (without cutting down on quality).

4.2.2. Episode 1 analysis

The empirics from Ulf Österstad illustrate a short time span from idea to implementation; about 1 ½ months. As suggested by Ulf Österstad, this made it possible for Bra Liv Nära to avoid getting stuck in the implementation processes. When direct-to-consumer telehealth was up and running in Bra Liv Nära, by the decision of the medical profession, Region Jönköping County found no reason to oppose the medical profession by judging that direct-to-consumer telehealth was not qualified healthcare. Further pressure to not oppose direct-to-consumer telehealth also seemed to stem from the explicit request for e-health innovations in Region Jönköping County, preferably implemented before the end of 2016. All these factors combined in creating an opportunity for direct-to-telehealth implementation in Region Jönköping County, and as long as it was primarily a service for Region Jönköping County inhabitants, it was not a big deal.


4.3.1. Episode 2 empirics

The relatively small-scale beginning with Bra Liv Nära was based upon cooperation between the public primary care centers Bra Liv and the private direct-to-consumer telehealth providers Kry.se (U.Ö.). Kry.se, who was already delivering direct-to-consumer telehealth to privately funded healthcare, was the only one able to provide direct-to-consumer telehealth on such short notice (U.Ö.). As time moved on, Kry.se and Bra Liv Nära decided to go their separate ways. Kry.se wanted to expand more rapidly and not be obstructed by the organizational tie to Bra
Liv, and Bra Liv Nära wanted more control over its service (U.Ö.). Bra Liv Nära eventually went on to cooperate with another platform provider, Visiba Care, but now direct-to-consumer telehealth had a “foot in the door” in Region Jönköping County. Privately owned but publicly funded primary care centers, such as Wetterhalsan, did not want to see themselves surpassed by their publicly managed competitors, and in the summer of 2016 they decided to offer direct-to-consumer telehealth to patients by making an agreement with MinDoktor.se (M.S.). Kry.se also went on to make an agreement with Läkarhuset i Tranås, another privately owned but publicly funded primary care center in Region Jönköping County, to provide a third choice in direct-to-consumer telehealth (Kry, 2017).

As stated earlier, there were no real issues of valuing direct-to-consumer telehealth until the first digital patient listed in other counties started appearing. Bra Liv Nära was designed as a service primarily for Bra Liv’s listed patients (U.Ö.), but in theory, it was available for anyone, as the new patient’s law in Sweden clearly stipulated that patients have the right to seek healthcare anywhere, even outside their county (J.V.; A.R.). Contrary to Bra Liv Nära, Kry.se and MinDoktor started promoting themselves and the benefits of direct-to-consumer telehealth nationwide. MinDoktor and Kry.se began advertising in places such as television and public transport, and consequently, the number of patient meetings grew fast (as illustrated in figure 4 below) (J.V.). Wetterhalsan estimates having about 40,000 digital patient meetings until April 2017 (M.S.).

![Figure 4. Growth of cross-county primary care visits in Region Jönköping County from June 2016 to March 2017.](image)

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5 The available choices of direct-to-consumer telehealth in Jönköping county today are: Bra Liv Nära powered by Visiba Care, Kry.se and MinDoktor.se
As the cross-county healthcare visits started appearing, Region Jönköping County was now forced to once and for all decide on how to handle and value direct-to-consumer telehealth regarding reimbursement, or else it would find itself in a situation where Jönköping County residents were paying for other county’s healthcare expenses. The concept of cross-border healthcare and the national out of county healthcare contract in Sweden has its roots in the 1950’s (A.R.). It would be unreasonable and inefficient to transport patients in need of hospital care to their home county if they are on travels far from home, but it is also important that patient gets access to certain kinds of specialist care if it is not available in the patient's home county. Cross-county patients have been handled for a long time via the national out of county healthcare contract, where the county delivering the healthcare sends a bill to the patient’s home county (A.R.). The price of each delivered healthcare service is listed on politically established price lists, individually produced by Sweden's six healthcare regions.

Jonatan Vincent: “It became an issue when the first cross-county direct-to-consumer telehealth meeting was produced in Region Jönköping County. What do we bill the patient’s home county?”

Region Jönköping County needed to decide on how to handle cross-county direct-to-telehealth reimbursement. In the regional price-list, there was nothing concerning direct-to-consumer telehealth (J.V.). This put Region Jönköping County in a tricky position as they could not make up a price, but must use a price that is politically valid, and the only valid prices are found in the price list. (J.V.).

Jonatan Vincent elaborates on the discussion regarding reimbursement of direct-to-telehealth reimbursement:

“Do we decide not to send any bills? That means that this is not classified as healthcare, but we have already decided that it is. The only difference is that the patient has not been physically present at the actual healthcare center.”

As Region Jönköping County had already decided that in Region Jönköping County direct-to-telehealth is equal to physical healthcare, it was decided that a bill must be sent to the patient’s

6 Sweden’s 20 county councils are split into six healthcare regions. For example, Jönköping, Kalmar and Östergötland county councils make up the southeastern healthcare region.
home counties, and that the only valid price in the regional price-list was a primary care visit (2200 SEK) until the politicians change the price-list (J.V.). Therefore, the value of a direct-to-telehealth meeting was set as 2200 SEK during 2016.

4.3.2. Episode 2 analysis

As direct-to-consumer telehealth was available to patients at the publicly managed Bra Liv healthcare center, it was natural that their competitors in the primary care market wanted to be able to offer their patients the same services. It would be unreasonable, even forbidden by law, if Region Jönköping County would not allow privately managed healthcare centers the same premises to the publicly managed. In theory, all patients in Sweden already had access to direct-to-telehealth through Bra Liv Nära, but the real issues began when Kry.se and MinDoktor started advertising their services. Unfortunately, as direct-to-consumer telehealth was reimbursed through Region Jönköping County but not restricted by physical distances, direct-to-consumer telehealth fell into a crack in the Swedish reimbursement model. Technically the patients are visiting a primary care center in Region Jönköping County and are reimbursed as a cross-county visit, but in reality they are not cross-county visitors, as they are visiting from home (or anywhere they have the necessary equipment). The problematic implications of this crack in the reimbursement model are the cost-escalating incentives, as the regional price-lists are based entirely upon P4P. Barnum et al. (1995) argue that unregulated fee-for-service reimbursement should be avoided due to the risk for “supplier induced demand.” As Kry.se and MinDoktor are private businesses, it would be illogical for them not to strive for bigger business. As every visit was reimbursed separately and direct-to-consumer telehealth is available to potentially anyone in the world, Kry.se and MinDoktor naturally started advertising to attract more customers. The fact that Swedish primary care has been suffering from accessibility problems did not make business any worse for the direct-to-consumer telehealth providers.

When Region Jönköping needed to put a price on the bills sent to other regions and county councils, there is some evidence of a lack of anticipation. As there was no pricing for web-based health services, but the practice was already in place, Region Jönköping County was in a bad spot. Jonatan Vincent argued that it would be wrong for Region officials to make up a price, as the prices must be politically validated, but at the same time direct-to-consumer telehealth was still on a minuscule scale in the summer of 2016, and therefore the lack of a
direct-to-consumer telehealth price was only a little problem. As the number of visits rose rapidly in fall 2016, the price of 2200.- was already established.

4.4. Episode 3. Fall 2016. Region Jönköping County introduces a price on direct-to-consumer telehealth

4.4.1. Episode 3 empirics

In the latter half of 2016, as the volumes started growing rapidly, Region Jönköping County realized that they needed to revise the price on direct-to-consumer telehealth and began working on a new product for the intra-county healthcare price list for 2017, the web-based patient/doctor meetings (J.V.). This price needed to be set before December 2016 in order to be able to be approved by the politicians in time for the 2017 price-list (J.V.). When the new price was to be calculated, direct-to-consumer telehealth was still fairly new, and there was a lack of sufficient data to base the calculations on (J.V.). Therefore, the calculations were based on a discussion and on assumptions such as that the patient meetings were of a more simple fashion, and that one of the reasons for using direct-to-consumer telehealth is that it is more rational, therefore the price should be lowered (J.V.). But how much, what was reasonable?

Jonatan Vincent elaborates on the reasoning behind the direct-to-consumer telehealth price:

“The traditional physician should be able to handle three-four patients an hour. How many should the direct-to-consumer telehealth physician be able to handle in one hour? Well, maybe twice as many, and if you can handle twice as many, then the price should be about halved then.”

The price on a direct-to-consumer telehealth visit was set to 1200 SEK in December of 2016 and implemented in the Southeastern Healthcare Region price-list in 2017 (J.V.).

4.4.2. Episode 3 analysis

When Region Jönköping County realized that the volumes of direct-to-consumer telehealth visits were rising rapidly, they acted pro-actively to introduce a (lower) price for direct-to-consumer telehealth in the regional price list. However, there were not a lot of knowledge or data regarding the cost of direct-to-consumer telehealth and time was limited. The price on
direct-to-consumer telehealth as 1200 SEK / visit was, therefore, more of a logical reasoning than based on facts. Generally, if you can use numbers and statistics to explain and justify your actions, you will have a higher legitimacy than if you are relying only on reasoning and narrations. It is therefore not surprising that the price on direct-to-consumer telehealth set by Region Jönköping County might lack in legitimacy.

4.5. Episode 4. Fall 2016 - Spring 2017. Other County Councils react on direct-to-consumer telehealth in Sweden

In the latter half of 2016 and the first half of 2017, as the bills for direct-to-consumer telehealth started appearing, media published negative County councils/region reactions on Region Jönköping County direct-to-consumer telehealth. To get a deeper understanding of the brief information in the articles, we interviewed the county councils/regions and asked them to elaborate on their views. The views will be presented below under separate topics.

4.5.1. Direct-to-consumer telehealth as legitimate in Swedish healthcare

Empirics: When asked to elaborate on feelings towards direct-to-consumer telehealth, all seven respondents in this study expressed positive feelings. All seven respondents believe that direct-to-consumer telehealth is beneficial if used at the right times, to the right patients.

(B.W.): “Patients should not be transported if we can avoid it by using digital technology.” (M.J.): “Direct-to-consumer telehealth is not the answer to all our problems, but it is one tool we can use.” and (J.V.): “We need to find methods for whom this is suitable, and for whom it is not.”.

Analysis: We concluded that all seven respondents mostly elaborated on direct-to-consumer telehealth benefits out of the patient's perspective. Only when questioned further benefits for society and cost-benefits are expressed. This suggests a patient's perspective illustrated from all county councils. None of the respondents expressed any negativity towards using direct-to-consumer telehealth within Swedish healthcare.
4.5.2. Direct-to-consumer telehealth as promoting excessive use of healthcare

**Empirics:**
Ashwood et al. (2017) state that direct-to-consumer telehealth may drive patients to seek care for an illness who would not have sought care if telehealth had not been available. When our respondents were asked to elaborate on their view on direct-to-consumer telehealth, some of them expressed smaller concern of overuse (J.V.; L.R.; M.H. & B.W.). All county councils, however, expressed concerns on defining “excessive use of healthcare.”

Brita Winsa elaborates: “what is excessive use? You, as a patient, might perceive a real need for healthcare, but me, as a doctor, might feel that it was a quite unnecessary visit.”

Joakim Björck: “There might be patients that visit primary care on too many occasions, but who is going to assess that?”. J.V., L.R., and J.B. even stated that direct-to-consumer telehealth might instead be a better way of dealing with that kind of patients.

**Analysis:**
The data in this study suggests that the county councils believe direct-to-consumer telehealth increases accessibility and therefore healthcare usage on some level, but it is not perceived as a big problem. Instead, accessibility connects to patient benefits, as discussed in the previous section, and is therefore not perceived as primarily negative, but instead perhaps a better way to handle patients who might “overuse” the healthcare service.

4.5.3. The process of direct-to-consumer telehealth implementation

**Empirics:**
When asked about how they learned about the fact that direct-to-consumer telehealth was available in Jönköping, all six respondents (J.V. excluded) stated an increasing number of invoices with increased amounts. M.H. was the only respondent that, besides invoices, stated that the county council also had been informed by Region Jönköping County. When asked to express their feelings regarding Jönköping’s implementation of direct-to-consumer telehealth, none of the respondents expressed any substantial critiques towards Region Jönköping County.
The closest thing to any criticism was M.H. as stating: “maybe one could have wished to be involved somehow and have a say.”

Instead of criticizing Region Jönköping County there were expressed some feelings regarding the way the system is constructed.

For example, J.B.: “It feels a little bit odd that Region Jönköping County can procure a caregiver, then this caregiver can subcontract another, and we end up with the bill.” continuing “in this fashion, other county councils control prices on our behalf.”

L.R: “This is a situation with three players, and somehow Region Jönköping County become the bank in this deal.”

S.Ö. expresses some concerns regarding government: “We cannot place any demands nor follow-up performance, as the monitoring requirements lie with Region Jönköping County” continuing “there are many steps between us making it difficult to ensure that we are delivering quality healthcare. This calls for cooperation between Swedish counties to learn from each other and work together in defining and setting up rules for digital health care.”

B.W. stands out in this study as the respondent with the clearest evidence of self-criticism: “This was a demand that existed, and we will just have to say that we were too slow to do something about it.”

**Analysis:**

The county councils also displayed evidence of a familiarity with the obligations and regulations stated by Swedish law. Therefore, they cannot, and did not, criticize the way direct-to-consumer telehealth was implemented in Region Jönköping County. They did, however, express some concern about being legally bound to subcontractors without the possibility of influence or control. All respondents in this study stated that they primarily learned that direct-to-consumer telehealth was implemented in Jönköping from invoices. It suggests a lack of intra-organizational communication between Jönköping and the other county councils. Lindholm (2013) argue that all actors must understand governance and therefore be used in communication between different groups of actors and hierarchical levels. According to
Lindholm’s theory (2013) receiving a bill without knowledge of what you are paying for contradicts legitimacy. This also concurred with Catasús & Grönlund (2005) that argue that if the measurements are in the hands of agents, the principals are losing power to the agents.

4.5.4. The price of direct-to-consumer telehealth

**Empirics:**

The price on the direct-to-consumer telehealth visit was criticized by all respondents (Jönköping excluded) as being too high, both before and after the price cut. When asked to elaborate on why the price is perceived as too high, the background varied somewhat.

- **J.B.**: “I do not know the exact details, but as I understand the effort in time is relatively small and therefore we feel it is too high.”
- **L.R.**: “The price of a direct-to-consumer telehealth visit should reasonably be lower than physical visit. There must be a completely different cost-base.”
- **M.J.**: “Before Kry and MinDoktor had a contract with Jönköping it was still possible to use it by paying for it yourself, and the cost for the patient then was 300 SEK, so maybe that is the reasonable price?”
- **M.H.**: “To ask us to pay 1200-1500 SEK for a visit that lasts for maybe about 15 minutes is not reasonable.”
- **B.W.**: “In my opinion, the price was too high for most of the time quite simple telephone calls or consultations that maybe only lasts for a couple of minutes.”

**Analysis:**

All six county councils (Jönköping excluded) expressed a negative attitude towards the price set by Region Jönköping Council on direct-to-consumer telehealth, both the original price of 2200 SEK and when it was later changed to 1200 SEK. When asked to elaborate on their reasoning, the respondents displayed some variety in their answers. None of the respondents stated that they had been doing any significant calculations on their own regarding direct-to-
consumer telehealth costs. This variety in cost-reasoning suggests that the county councils lack knowledge of direct-to-consumer telehealth costs. This study also suggests a lack of information exchange between Jönköping and other county councils regarding how the price on direct-to-consumer telehealth in Jönköping was both calculated and implemented. According to Lindholm (2013), this lack of inter-organizational communication affects the legitimacy of the prices.

4.5.5. The reimbursement model for direct-to-consumer telehealth

**Empirics:**
Our respondents (including Jönköping) were asked to elaborate on their feeling towards the reimbursement model currently used for reimbursing direct-to-consumer telehealth. The response was a bit mixed as the respondents had difficulties seeing any other reimbursement model that would work on cross-county healthcare. Some of the respondents commented on the outdated design of the reimbursement model:

“The mobility of patients and digital patient meetings means that our present models must be revised” (J.B.)

“The cross-county price-list has not been adapted for these types of services. One conclusion one can draw is that the development has been too fast and the county councils too slow.” (S.Ö.)

Brita Winsa elaborated on the incitement for production:

“As long as the caregiver makes a profit on this I believe there is a risk of over-consumption, as it is to a high extent driven by financing.”

**Analysis:**
Barnum et al. (1995) state that there is no optimal or superior reimbursement model in healthcare and therefore there is not an easy task to come up with a reimbursement model that would work better. This is reflected by the respondents as they did not criticize the current model to any greater extent. It is mostly regarded as a system that works, but some of the respondents elaborated on how the new macro-environment has made it partially outdated. Scholars argue that unregulated fee-for-service reimbursement should be avoided or combined
with fixed limitations on production (Barnum et al., 1995; Lindgren, 2014). The P4P cross-county reimbursement model was originally in practicality combined with a physical limitation of customers, as these customers were difficult to get access to, due to the distance between consumer and producer. This physical limitation was removed at an instance with the introduction of direct-to-consumer telehealth. It makes direct-to-consumer telehealth an example of disruptive changes that renders old reimbursement models unsuitable.


Empirics:
As many Regions and county councils reacted towards the direct-to-consumer telehealth price and the inter-organizational relations that arose, many Regions/county councils asked SALAR for guidance. As many regions and county councils also found that direct-to-consumer telehealth was overpriced, SALAR was tasked with calculating a reasonable price on direct-to-consumer telehealth (A.R.). The financial directors also wanted SALAR to investigate if the regions and county councils had an obligation to pay these sub-contractors in Region Jönköping County (A.R.). SALAR began work on these two queries in February 2016.

SALAR’s lawyers concluded that there was an obligation to pay these subcontractors, as long as they comply to the same qualifications as their affiliated healthcare center (A.R.). In spring 2017, direct-to-consumer telehealth in primary care was still quite new. Therefore, there was no real empirical data for SALAR to use for making cost calculations (A.R.). SALAR instead used an approach similar to Region Jönköping County for calculating the price on direct-to-consumer telehealth, working with assumptions (A.R.). SALAR worked with median earnings, different assumptions regarding the size of staff needed, and other costs associated with direct-to-consumer telehealth (A.R.).

Agneta Rönn elaborates: “We believe it is possible to come a long way using assumptions, and we have quite many references regarding reimbursement and prices of physicist visits.”

In May 2017, SALAR presented their work and recommended a price on direct-to-consumer telehealth between regions and county councils of 650 SEK. Before SALAR was finished with
their task, we asked our respondents to predict on how their regions/county council would accept the price on direct-to-consumer telehealth about to be suggested by SALAR. All county councils, including Jönköping, expressed a clear acceptance and will to comply.

**Analysis:**

The empirics show that SALAR was not tasked with changing the reimbursement model. It is understandable as that would be a complex task and would probably take a long time if it was even possible to solve. Instead, SALAR was tasked with checking legal obligations and figuring out an acceptable price on direct-to-consumer telehealth, something that could be solved in a couple of months. It was interesting empirics that our respondents expressed a clear differentiation between feelings towards direct-to-consumer telehealth prices set by Region Jönköping County and direct-to-consumer telehealth prices established by SALAR. This suggests a perceived higher legitimacy in prices set by SALAR than prices set by Region Jönköping County, even though they were both calculated using assumptions.

One interesting side note, slightly beyond the scope of this study, is that the two main providers, Kry.se and MinDoktor, states that 650 SEK does not cover their costs for producing direct-to-consumer telehealth (Boström 2017; Capuder, 2017).
5. Discussion

As Sweden has generally been at the forefront of IT development and IT infrastructure development, it was perhaps not surprising that Sweden would be a pioneer in direct-to-consumer telehealth. As Swedish healthcare had for a long time been plagued with inaccessibility, direct-to-consumer telehealth was, in retrospect, an obvious solution to improving accessibility in primary care. When Bra Liv Nära was opened, one of the thoughts behind it was the opportunity to “visit” your regular physician if you needed to while traveling, something that patients probably would appreciate. Other possible benefits for both patients and caregivers are clear, as traveling and waiting times can be minimized, and fixed assets such as waiting rooms and customer bathrooms can be removed. If physicians are not able to make it work, any replacing physician could hypothetically be summoned from anywhere in the world, as long as the physician has access to the necessary IT equipment. The drawbacks of direct-to-consumer telehealth are in the same way also quite easy to spot. It is not possible to do any physical tests, something that is many times needed to make a diagnosis or to do any physical activities such as removing stitches or administering medications via a needle. Primary care accessibility in Sweden can be said to have increased significantly, as the direct-to-consumer telehealth suppliers currently offer contact with a doctor significantly faster than the common healthcare center, and the service is available outside of regular business hours. All our respondents also expressed positive feelings regarding direct-to-consumer telehealth, primarily out of the perspective of improved service for patients. It is easy to concur with all our respondents in the argument that having easy access to healthcare could not be a bad thing, and that what is important is how to manage the patient meetings efficiently and with quality. Direct-to-consumer telehealth cannot replace all other health care, but our respondents all believe that, if used wisely, it could remove some of the visits too, for example, emergency departments. We also believe that, as in other services, if patients do not find the service of value to them, they will stop using it and find other ways to access healthcare. If a patient is persistent enough to see a doctor, he will always access a doctor within 24 hours, either through the primary care centers or emergency departments. We tend to concur with our respondents that some of these patients perhaps are better dealt with via direct-to-consumer telehealth than physical healthcare. Therefore, we believe there isn’t a question if direct-to-consumer telehealth will exist, but rather in what form and for what patients. There are also some unmeasurable values to society of direct-to-consumer telehealth, as transportation times and
costs, time off from work among other things are minimized. These thoughts are the contribution of this paper to the field of direct-to-consumer telehealth efficiency.

The aim of this study was rather to investigate how patient empowerment and digitalization spurred the implementation of direct-to-consumer telehealth in Swedish primary care, and the process of bestowing it a value. In this study, we had found that when the first direct-to-consumer telehealth service in Sweden was opened, Bra Liv Nära, was not out of a desire for efficiency, but from a desire of improving accessibility. There is a reason to suspect that Bra Liv Nära got up and running due to the short time span from idea to implementation. As no questions were asked, direct-to-consumer telehealth probably avoided getting stuck in the implementation process. When direct-to-consumer telehealth was operating in Region Jönköping County, the public officials found no reason to oppose the judgment done by the medical profession regarding direct-to-consumer telehealth as a legitimate method of delivering primary care. This decision was probably also influenced by an organizational pressure on the regional officials to promote e-health developments within the region. During the first couple of months, December 2015 - June 2016, there were no economic consequences as direct-to-consumer telehealth was reimbursed within the capitation model internally within Region Jönköping County. Therefore direct-to-consumer telehealth in primary care in the early stages was primarily an intra-organizational construction within Region Jönköping County.

The real inter-organizational effects started when cross-county patients began using direct-to-consumer telehealth-provided by Region Jönköping County. The “foot in the door” that direct-to-consumer telehealth had established in Region Jönköping County had led to startups of competition within the direct-to-consumer telehealth market. Region Jönköping County was not in a position to deny direct-to-consumer telehealth competition, as they are obligated to obey the freedom of choice law. Contrary to Bra Liv Nära however, the competitors did not restrict themselves to local personnel or specifically targeted listed patients. Accordingly, they advertised their presence on a national scale. Consequently, cross-county patients started using direct-to-consumer telehealth services provided in Region Jönköping County healthcare. Region Jönköping County once again was restricted from preventing this, as the patient's law states that patients have the right to seek healthcare in another region/county if they so desire.
The inter-organizational relationships de facto appeared when cross-county patients started using direct-to-consumer telehealth services provided in Region Jönköping County healthcare but became a formal relationship when Region Jönköping County was forced to decide on how to reimburse the visits performed by patients living in other regions/counties. Society now demanded a formal valuation of direct-to-consumer telehealth. If Region Jönköping County did not invoice the patient's home counties, that would entail that Region Jönköping County would provide primary care to the whole of Sweden, without getting funding for it. This is not viable for any region or county. Therefore Region Jönköping County started invoicing the patient's home county. At the time, direct-to-consumer telehealth was not anticipated, and therefore it had no value and no price in the regional price list. In that situation, the Region Jönköping County officials chose to use the price of a regular physical primary care visit of 2200 SEK. In the latter half of 2016, Region Jönköping County realized, as the number of direct-to-consumer telehealth visits grew, that direct-to-consumer telehealth needed a price in the regional price list. However, as Fourcade (2011) states, calculating monetary values in healthcare is complex. Region Jönköping County was also not aided by the fact that direct-to-consumer telehealth in late 2016 was a new practice, and sufficient data for calculations was therefore lacking. Region Jönköping County official’s option was to fall back on reasoning and assumptions. The conclusion was that the price should be about halved, hence the price for the new 2017 regional price list was set at 1200 SEK. However, even at 1200 SEK other regions and county councils felt that direct-to-consumer telehealth in Region Jönköping County was overpriced. Therefore, SALAR was tasked in February 2017 with calculating a reasonable price on direct-to-consumer telehealth that all regions and county councils could agree on it. In May 2017 SALAR recommended a price of 650. This price was also based on reasoning and assumptions for the same reasons as in the case of Region Jönköping County, a combination of a lack of sufficient data and the difficulties involved in evaluating public goods.

When analyzing the implementation and pricing process of direct-to-consumer telehealth in Region Jönköping County, it suggests a result of a snowball effect. As Bra Liv Nära was able to implement direct-to-consumer telehealth without getting stuck in the process, the snowball was in motion. All events that followed can be said to be a result of the motion that was started. The private health centers saw an opportunity to be at the forefront of healthcare development, and the direct-to-consumer telehealth provides an opportunity for business. In the case of Region Jönköping County, as the events unfolded the region were many times reduced to reacting and not pro-acting, thus reducing the possibility for planned governance. The intra-
organizational pressure on e-health development probably also made it more difficult for Region Jönköping County to stop the snowball. The Swedish healthcare system, the freedom of choice law and the patient’s law, then created the inter-organizational relationships between the direct-to-consumer telehealth providers, Region Jönköping County, and the other regions and county councils.

The aim of this study was also to investigate why the direct-to-consumer telehealth in Region Jönköping County was perceived as overpriced by other regions and counties. Recent research in the United States argue that direct-to-consumer telehealth does not decrease the “spendings”, but rather increase access and therefore the “spendings” are the same or possibly increased (Ashwood et al., 2017). First of all, we must understand that cost-efficiency was never the explicit goal of the direct-to-consumer telehealth implementation in Region Jönköping County, and therefore perhaps cannot be expected. As long as direct-to-consumer telehealth was used by listed patients in Bra Liv, the practice also did not have any value regarding money as Bra Liv was reimbursed by capitation. However, when used by patients living in other counties, the value became 2200 SEK/visit. It is logical that the price of a primary care visit has poor legitimacy if used on another product, in this case, direct-to-consumer telehealth. All respondents in this study also clearly objected to using the price of a primary care visit on direct-to-consumer telehealth. In theory, the specific direct-to-consumer telehealth price of 1200 SEK in 2017 should be more legitimate. The data in this study, however, suggest a lack of legitimacy also in the specific direct-to-consumer telehealth price, due to lack of communication between Region Jönköping County and the other regions and county councils. Lindholm (2013) states that for governance to be perceived as legitimate it must be understood by all actors and used in communication between different groups of actors and hierarchical levels. In the case of direct-to-consumer telehealth implementation and pricing in Region Jönköping County, this study suggests a clear lack of communication and information exchange between the parties in the inter-organizational relationship. All respondents stated an increased amount of bills as the primary source of information on the inter-organizational relationship that had been established through direct-to-consumer telehealth. The variances of answers and variance of knowledge of the implementation and pricing process of direct-to-consumer telehealth expressed by our region and county council respondents\(^7\), also point to

\(^7\) Region Jönköping excluded.
deficits in the information exchange. The fact that all regional and county council respondents expressed that direct-to-consumer telehealth was overpriced (both before and after the price cut in 2017), even though none of them had done any calculations, suggest a problem with legitimacy stemming out of poor communication. Hence this suggests some interesting findings, which Region Jönköping County’s reasoning and assumptions behind the direct-to-consumer telehealth price were perceived by our respondents as less legitimate than their reasoning and assumptions. Perhaps even more interesting findings is that all respondents accepted the price set by SALAR, some of them before they had learned about the price, even though SALAR, just as Region Jönköping County, used reasoning and assumptions when calculating the price. It suggests that SALAR is perceived as legitimate due to their profession and status, and highlights the importance of an actor perceived as legitimate by all parties in inter-organizational relationships.

This paper also studied the reimbursement models used in Swedish direct-to-consumer telehealth. With the current reimbursement model, when patients are visiting healthcare in other counties, the reimbursement effectively changes from whatever is used in the providing region/county to a Pay-for-Performance (P4P) reimbursement model. Research tell us that using one single reimbursement model removes the possibility for county councils to mitigate the effects of that reimbursement model and decreases the possibility to use reimbursement models for governance (Lindgren, 2014). In the case of direct-to-consumer telehealth, this reimbursement model creates some especially perverse effects as the patients are not visiting a healthcare center in Jönköping county, except in theory. The current reimbursement model for direct-to-consumer telehealth deprives the patient’s home county of the possibility for management, as well as the possibility of controlling the quality of healthcare services delivered. The patient’s home county is only left with a bill, a situation few organizations would be happy about. A P4P reimbursement model is also generally problematic in healthcare as it provides strong incitement for increased production (supplier-induced demand) (Barnum et al., 1995), and as the consumer of direct-to-consumer telehealth services can, theoretically, be living anywhere in the world, there is a seemingly endless base of customers.

The Swedish implementation of direct-to-consumer telehealth is a great example of a P4P model creating supplier-induced demand. No primary care provider in Sweden has ever put so much money and effort into advertising nationwide as the two direct-to-consumer telehealth providers, Kry.se and MinDoktor has done lately. The direct-to-consumer telehealth
implementation in Swedish primary care has illustrated that the national out of county healthcare contract, with roots in the 1950’s, is ill-equipped for the healthcare services of the digital age. Another aspect of how healthcare systems based on borders clash with digital healthcare is the variance of patient’s fees between regions and counties in Sweden. If multiple regions or county councils implement direct-to-consumer telehealth, there will be incitements for patients to visit via the county councils with the lowest patient’s fees. This study highlights that digital healthcare transcends physical boundaries, and using reimbursement models based on country boundaries is not optimal. We would like to stress, however, that despite some of our initial assumptions, all our respondents were content with the current reimbursement model. It suggests a legitimacy of the current model, as it is understood by all respondents. The respondents also expressed that there are currently no ideas or suggestions of any other models that would work better. It is however unfortunate that direct-to-consumer telehealth in Sweden currently has fallen into a crack in the reimbursement model, both from an economic perspective, as much money this way has been extracted from Swedish healthcare, but also for research, as the incitement for overproduction makes it harder to study direct-to-consumer telehealth cost efficiency. This paper will however not engage in discussing reimbursement further, as suggesting alternative forms of governance or reimbursement is not the aim of this paper.

Finally, perhaps some critique can be addressed at the Swedish regions and county councils as well as at SALAR. In retrospect, it is notable that direct-to-consumer telehealth was not anticipated better in Swedish healthcare. The data in this study suggests that the Swedish healthcare system was caught off guard when direct-to-consumer telehealth went into operation in 2015. Perhaps it could have been expected that the regions, county councils and SALAR would be better at anticipating it? In May 2017, there is still no definite solution in place to pricing and reimbursing direct-to-consumer telehealth in Sweden, and the discussion concerning it will, as we see it, go on for a while still. One might ask how much money has been drained from public healthcare during this time, and how much will continue to escape before a proper model for governing and reimbursing direct-to-consumer telehealth is in place?
6. Conclusion

This paper set out to study how patient empowerment and digitalization spurred the implementation of direct-to-consumer telehealth in Swedish primary care, and the process of bestowing it a value. The aim was to contribute with practical knowledge on the process and to contribute with theoretical knowledge regarding legitimacy in inter-organizational relations within the field of public healthcare governance. So far there is limited research available on direct-to-consumer telehealth (Ashwood et al., 2017; Ekman, 2017). The high hopes placed on telehealth by both scholars and public debate makes the direct-to-consumer telehealth implementation in Sweden an interesting object to study, both from a theoretical and practical perspective. As the population in the western societies are getting increasingly older, and the percentage of individuals supporting the elderly and/or disabled is getting lower, it is quite clear that simply granting more public funds to increase healthcare spending will not be a viable solution to keep up with the needs. As the practice of direct-to-consumer telehealth is still in its early stages in Sweden and also worldwide, it is not yet possible to do any qualitative studies on any actual efficiency gains. Sweden also differs from the United States in the way healthcare is funded, something which might render the study of direct-to-consumer telehealth effects in the United States by Ashwood et al. (2017) inapplicable in Sweden, and vice versa. What we are reduced to, at the present time, is to do qualitative studies to understand the direct-to-consumer telehealth implementation in Sweden better.

This study suggests that when direct-to-consumer telehealth service was implemented in Swedish primary care, the actors were primarily considering the benefits to the patients, without considering the consequences in economic terms. The implementation of the first direct-to-consumer telehealth service created a snowball effect that created complex inter-organizational relations between the service providers, Region Jönköping County, and the patient's home regions or councils. The inter-organizational relationships that were formed suffered from poor legitimacy due to deficits in inter-organizational communication. The evidence in this study also suggests that the perceived “overpricing” of Swedish direct-to-consumer telehealth was a consequence of the inter-organizational relationships. As the relationship was imposed by Swedish law, the topic of discussion between the actors instead became the legitimacy of the price. This study suggests that the reasoning’s and assumptions made internally within the regions and county councils were perceived as more legitimate than the reasoning’s and assumptions made by another part, in this case, Region Jönköping County.
This study also suggests that the reasoning and assumptions are perceived as legitimate if made by a part perceived as legitimate by all parties due to their profession and status, in this case, SALAR.

Concluding, this study also highlighted what might occur when old reimbursement models clash with the digital era. In the case of a digital service, such as direct-to-consumer telehealth in Sweden, a reimbursement model based on physical borders is ill-fitting. In Swedish direct-to-consumer telehealth, this created incitements for overproduction and a situation where financial control over the agent was lost. Apart from this conclusion, any evidence regarding efficiency and cost-savings in Swedish direct-to-consumer telehealth is hard to extract from this study, and also falls slightly outside the frame of this research. This paper also does not consider any medical perspectives of direct-to-consumer telehealth quality, as this was not within the scope of this study.

6.1. Suggestions for further research

All respondents in this study have agreed that direct-to-consumer telehealth will be a natural part of healthcare in the years to come. If this holds true, and direct-to-consumer telehealth becomes a natural part of Swedish healthcare, a study of economic effects would indeed be of interest a few years down the line. As more data becomes available, it will be possible to do a study similar to Ashwood et al. (2017) to determine if direct-to-consumer telehealth decrease costs in Sweden. Another research of interest would be studying to what extent direct-to-consumer telehealth is, in fact, replacing physical meetings. A third possible area of research would be to study if the population in rural areas in Sweden benefit from the increased accessibility of direct-to-consumer telehealth, or if the service is primarily used by patients with already convenient access to physical healthcare. At last, one of the most interesting objects to study is if direct-to-consumer telehealth is reducing the high workload in the emergency departments, as this was one of the main reasons behind the implementation of direct-to-consumer telehealth in Sweden.
References


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Vårdguiden 1177, 2017 [ONLINE] Available at: https://www.1177.se/


Appendix 1

Interview template

Personal

Name:

Title/position:

**Direct-to-consumer telehealth in healthcare / primary care**

1. What are your general thoughts on direct-to-consumer telehealth?

2. What are your general thoughts on the advantages with direct-to-consumer telehealth?

3. What are your general thoughts on the disadvantages regarding direct-to-consumer telehealth?

4. Are you using direct-to-consumer telehealth or other digital tools in healthcare within your county?

5. Do you feel that direct-to-consumer telehealth replaces physical visits or do you believe that direct-to-consumer telehealth attracts visitors that otherwise would not seek healthcare?

**Relation to direct-to-consumer telehealth in Jönköping county council**

6. How did your county get involved in direct-to-consumer telehealth provided in Jönköping county?

7. Do you have any comments on how direct-to-consumer telehealth was implemented in Jönköping county as it also has effects in your county?

8. Do you have any comments on how direct-to-consumer telehealth was priced in Jönköping county? (Both before and after the price cut)

9. Do you have any comments on how direct-to-consumer telehealth is reimbursed generally?

10. Has direct-to-consumer telehealth consumption in Jönköping had any substantial effects on healthcare in your county?
SALAR

11. Were you one of the counties that tasked SALAR with investigating direct-to-consumer telehealth liability and pricing?

12. Do you think your county will accept the findings and price on direct-to-consumer telehealth recommended by SALAR?

Other questions

13. In your county and in Sweden generally, what are your thought on the future of direct-to-consumer in primary care and where direct-to-consumer will go from here?

14. Do you have any comments on what you believe any other particular groups feel about direct-to-consumer telehealth?

15. Do you have any comments on anything else that has been brought up in the direct-to-consumer telehealth debate?

16. Do you think there was something else we should have asked?

17. Do you have any suggestions of other persons we should talk to?