Person centric payment interactions in healthcare: How could a future healthcare payment system look like and what can we learn from other industries?

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Abstract

Title: Person centric payment interactions in healthcare: How could a future healthcare payment system look like and what can we learn from other industries?

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A high level of bureaucracy and a low level of digitization lead to inefficient administrative tasks, especially payment processes for privately insured persons and out-of-pocket expenses, in medical clinics in Germany. Technological innovation can digitize the processes and improve the customer- and user-experience significantly as seen in online retail.

This study applies qualitative research, i.e., semi-structured interviews, with patients and medical clinics to explore if there is a need for technological change of payment processes clinics in Germany and what are the requirements for a convenient payment process. Combined with learnings from the literature recommendations for healthcare organizations are derived so that these push digital solution in the market.

The findings indicate a general satisfaction of clinics and patients with the payment process as they do not verbalize a need for technological change. However, they express a non-verbalized need for change. Based on how they talk about payment processes, they are subconsciously revealing they do not believe that change is possible in the healthcare industry. Healthcare organizations can drive technological change and implement payment processes which create a convenient customer- and user-experience by probing stakeholders with different options (e.g., from online retail) to overcome inertia and a lack of capacity to stimulate expressing their needs.

Keywords: Computers, Digital Services, Healthcare, Clinics, Payment

JEL classification: L860 Information and Internet Services; Computer Software

Sumário

Título: Interacções de pagamento centradas na pessoa nos cuidados de saúde: Como poderia ser um futuro sistema de pagamento de cuidados de saúde e o que podemos aprender com outras indústrias?

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Um elevado nível de burocracia e um baixo nível de digitalização tornam as tarefas administrativas ineficientes. Tal é especialmente verdade em clínicas médicas na Alemanha no que diz respeito aos processos de pagamento para segurados privados e pagamentos "out-of-pocket". A tecnológica pode digitalizar os processos e melhorar a experiência do utilizador. Isto acontece já no comércio a retalho online.

Este estudo utiliza metodologia qualitativa, através de entrevistas semi-estruturadas, com pacientes e clínicas médicas para explorar se há necessidade de mudança tecnológica e dos processos de pagamento nas clínicas alemãs e quais são os requisitos para um processo de pagamento mais conveniente. Dos resultados e da literatura, são extraídas recomendações para as organizações de saúde exigirem soluções digitais adequadas do mercado desoluções digitais.

Os resultados indicam uma satisfação geral das clínicas e pacientes com o processo de pagamento, uma vez que não verbalizam uma necessidade de mudança tecnológica. No entanto, expressam uma necessidade de mudança não verbalizada. Com base na forma como falam sobre os processos de pagamento, revelam subconscientemente que não acreditam que a mudança seja possível na indústria dos cuidados de saúde. As organizações de cuidados de saúde podem impulsionar a mudança tecnológica e implementar processos de pagamento que criam uma experiência conveniente para os clientes e utilizadores, sondando as partes interessadas com diferentes opções (por exemplo, do retalho online) para superar a inércia e a falta de capacidade de estimular a expressão das suas necessidades.

Palavras-chave: Computadores, Serviços Digitais, Cuidados de Saúde, Clínicas, Pagamento

Classificação JEL: L860 Information and Internet Services; Computer Software

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List of abbreviations

AI	Artificial intelligence
BNPL	Buy-now-pay-later
B2B	Business-to-business
B2C	Business-to-consumer
C2C	Consumer-to-consumer
FinTech	Financial technology
GDP	Gross domestic product
ICT	Information and communication technology
IGeL	"Individuelle Gesundheitsleistungen" (individual healthcare services)
IoT	Internet of things
NFC	Near-field communication
SEPA	Single Euro Payments Area
SME	Small and medium-sized business
VR	Virtual reality
WHO	World Health Organization

Preface

First and foremost, I would like to thank Dr. Tobias Heuer, who supported me right from the beginning with his time, knowledge, and constant advice on a rational and emotional level. I am not taking any of this for granted and am very happy to have the opportunity to learn from you every day.

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1. Introduction

1.1. Background and relevance

The increasing life expectancy of patients and the complex diseases they suffer from have grown the demand for medical services (Lino & Martins, 2021). However, a shortage of medical staff decreases the capacity and constrains the supply of healthcare. Thus, the supply of medical services mismatches the demand posing a challenge in most developed countries. Further, the high level of bureaucracy and the low level of digitization slow down the operational efficiency within healthcare systems. Specifically, the efficiency of administrative tasks in medical clinics (de Koning et al., 2006). The resulting pressure causes job dissatisfaction of medical staff and negatively influences the patient experience as the service quality decreases (Abdalkareem et al., 2021). Implementing technological innovations could serve as key drivers to cope with the limited supply and increase the administrative efficiency of medical clinics by transforming laborious processes and improving the quality of medical care regarding its patient experience dimension, and to herald a new technological age in healthcare (von Eiff & von Eiff, 2020).

In other industries, companies have improved the customer experience by digitizing processes. For example, in the automotive sector, where customers can configure and order cars online or in e-commerce, where customers can do their day-to-day purchases online using fully digital check-in and check-out processes. The changes have been met by a high customer demand because they have led to a superior customer experience and shifted a large share of the offline market online (Bick et al., 2022). The healthcare industry has introduced digital solutions into day-to-day routines. Online appointment booking management systems (e.g., Doctolib) digitize the paper calendar and replace the landline for medical staff or artificial intelligence (AI) solutions which support the anamnesis and guide the therapy decisions of doctors (e.g., DentalXrai). Both examples show that medical staff and doctors can perform their tasks with both greater speed and accuracy and, hereby, increase the productivity and efficiency of the healthcare industry. However, these digital solutions remain exceptions. The medical sector is far from making use of its digital potential as it lacks the efficiency and productivity other industries were able to achieve. Adoption rates of such technologies are slow (Goldfarb & Teodoridis, 2022) and studies by McKinsey (2022) suggest that at least 26 digital solutions need to be introduced. In Germany only EUR 1.4 billion out of a potential of EUR 42 billion have been actualized between 2018 and 2022 (McKinsey & Company et al., 2022). While the biggest company in the world could be a consumer health tech company (Wolf & Pande, 2022), digital

innovations cannot be observed in public industries more generally, and specifically in the healthcare market where medical clinics rely on outdated practice management systems (PMS), inefficient paper-based processes (e.g., anamnesis) and broken payment gateways (e.g., payment for treatments). Thus, a digital healthcare system can provide better access, convenience, efficiency, and decrease the need for healthcare (Martins, 2020).

Even though new technologies are available in the healthcare market, they have not yet been tapped by medical clinics in Germany. Outdated administrative set ups, such as the patient payment process, have not been digitized, require manual effort and produce high printing cost as they rely on unsustainable amounts of paper and are intensively time consuming. Oftentimes, the payment process is outsourced to factoring companies, which take care of collecting the claims from patients. Patients receive a physical invoice from the factoring company by mail. The process is even more complex due to the structure of the German healthcare system. Payments are only relevant for certain services (e.g., professional teeth cleaning) and privately insured persons. There are services that are out-of-pocket-expenses for every patient which do not involve health insurances. Privately insured persons pay their clinic visit and receive a reimbursement after submitting the invoice with their insurance. These offline billing processes are time-consuming, prone to errors and remain both inefficient and unproductive for patients and clinics alike. While the payment processes as part of the *check-out* in industries such as retail were revolutionised by Financial-Technology-(FinTech)-as-a-Service (FaaS) providers (Stiltner, 2021) such as Adyen, Stripe or Klarna, the payment processes in clinics remained unchanged in the past decades.

To overcome the operational inefficiencies in healthcare De Koning et al. (2006) talks about process innovation as an enabler. Technology can facilitate such process innovation and therefore contribute to the transformation of the healthcare industry. Kraus et al. (2021) studied the status quo of the digital transformation in healthcare and presents how the implementation of different technologies leads to operational efficiencies, framing patient-based approaches as nascent. For healthcare, this is especially important, because these efficiency problems typically refer to medical and administrative processes (de Koning et al., 2006). With a special focus on inefficiencies in billing processes, Dasdemir et al. (2013) researched how to improve the patient journey in the context of billing processes in hospitals and identified errors in the medical billing process. In the focus area of medical billing, Adams et al. (2002) observed the problem

of the number of unpaid claims of a medical clinic. To improve the clinics' cash flow, compliance and risk management strategies are crucial (Adams et al., 2002).

As the healthcare industry is fragmented, this research cannot be applied to the German healthcare system, especially not to medical clinics. In addition, most of the research focuses on hospitals, which have different requirements and processes compared to medical clinics. Therefore, this thesis fills this research gap and adds to the knowledge of current market needs for a digitized payment system in Germany, taking into consideration best practices from other industries.

1.2. Research questions

Technological innovations ensure convenient payment processes for stakeholders in industries such as online retail. This is not the case for medical clinics (Andrusko et al., 2022). This study aims to explore the market needs for a future healthcare payment system and provides recommendations for healthcare organizations (e.g., factoring companies) to include those market needs into their service lines, eventually asking IT companies to take them into account while looking at product development. This main aim can be broken down into the following research questions:

RQ 1: Is there a need for technological change of payment processes in medical clinics in Germany?

RQ 2: What is required by patients and medical clinics to achieve a convenient payment process and what are recommendations for software developers and healthcare organizations to implement a customer- and user-centric payment system?

1.3. Structure

Based on the research questions mentioned above this thesis theoretically discusses the importance of innovation considering technological innovation as well as the role of customer centricity when introducing such innovations. Afterwards, it presents the status quo of innovation in the retail industry and in the healthcare industry with a focus on the German market. The subsequent methodology section outlines the structure of the qualitative study. The following chapter 4 presents the results, divided into two sections matching the research

questions. Chapter 5 analyses and discusses the results, provides recommendations, summarizes the work in the relevant key conclusions and outlines some study limitations and future work.

2. Theoretical background

2.1. Innovation

2.1.1. Value added through technological innovation

Due to the increased popularity of the term *innovation*, one could be lead to think it was invented recently. However, it has been used for decades already. One of the earliest innovations is the wheel, without which a lot of today's common products would not exist and function. To be classified as an innovation, something must be new and useful, i.e., add value to a product, process or service. This can relate to products or services, processes, or business models (Gibson, 2022). Table 1 defines the three distinct types of innovation.

Product/service innovation	Process innovation	Business model innovation
Introduce new product/service or feature, e.g., automobile	Increase process efficiency, e.g., assembly line in manufacturing	Transform business operations, e.g., ride-sharing platforms

Table 1: Types of innovation (Source: Gibson, 2022).

Today's successful innovations are mostly process innovations rather than product innovations. Oftentimes, such innovations include technology. The Gartner hypecycle assesses emerging technology trends and defines technologies, such as industry cloud platforms, metaverse or autonomic systems, as innovation triggers (Gartner Inc., 2022). Technological innovation is a crucial stimulus to decrease inefficiencies and improve the customer journey and thereby impacts economic growth, industrial productivity, and international competition (Utterback, 1974).

In general, the innovation process consists of three phases: 1. idea generation 2. problem-solving or development 3. implementation and diffusion (Utterback, 1974). Innovation does not always root from the same stakeholders but differs with respect to the structure of the respective industry. Retail for example is a mature industry in which smaller or new organizations drive innovation (Utterback, 1974). The diffusion theory describes the concept of such adoptions of new technologies. It clarifies how, why and at what rate the innovation spreads within a social system. The adoption rate depends on the perceived value of the innovation (relative advantage, compatibility, complexity, trialability, and observability) (Rogers, 1995). Diffusion differs depending on the market, i.e., adoptions by consumers vs. adoptions by organizations (Rogers, 1995). Consumer's adoption tends to start slowly with only a few early adopters, who raise awareness and thus attract an early majority. An organization's adoption depends on how many

competitors or other organizations are already using the innovation and the resulting profitability while evaluating the required investment for adoption. The primary determinant for adoption is the relative perceived advantage of the innovation. This can be a reduction in unit economics, increased demand of product or service or degree of associated risk in relation with the absolute cost of an innovation. Factors such as amount, quality and value of information impact the adoption process. To increase the adoption rate, fewer individuals, particularly users, should be involved in the adoption decision (Rogers, 1995). Further, missing compatibility with already existing processes or major process change requirements slow down the adoption rate (Utterback, 1974). A pitfall of innovation is the *innovator's dilemma*. The concept explains the process of companies assessing the market potential and the customer need for a technology while the innovation might not serve the need as efficiently as the current product or service and thus customers reject the innovation. Addressing only a smaller market bears the risk of the company jeopardizing its business (Bower & Christensen, 1995).

If the adoption of an innovation is successful, it might be a disruption.

2.1.2. Strategic approaches to technological innovation

Technological innovations have the power to disrupt entire markets and change them thoroughly, as demonstrated for example by Netflix. By introducing on demand video streaming, traditional television and DVDs became obsolete. Not every innovation is a disruption but can still impact a market. Therefore, innovation can be differentiated into two categories: incremental and radical. Incremental innovation describes the improvement of already existing processes or products whereas radical innovation is the development of entirely new products or services. Incremental innovation processes serve to protect existing business models by strengthening the competitive advantage. Those innovations are less risky and comparably cheaper than developing a new product from scratch. However, they depend on traditional structural arrangements and market-oriented strategies (e.g., growth strategy) focusing on maintaining a competitive advantage (Ettlie et al., 1984). Most innovations are incremental because they present a clear and short-term potential for profit (Utterback, 1974), e.g., the Apple iPhone. Since its introduction in 2007, Apple continuously improves the smartphone and launches a new model every year. As the smartphone industry already exists, the introduction of this innovation is defined as a red ocean strategy (Chan Kim & Mauborgne, 2005). Compared to incremental, radical innovation promises significantly higher outcomes if

successful, e.g., an entirely new market with no competitors. To be classified as a radical innovation, the technology either must be new to the market and new to the referent group of organizations (i.e., no competitors) or requires change in throughput and output (i.e., process and product or service) (Ettlie et al., 1984). To support radical innovation, organizations need an aggressive technology policy and unique structural arrangements. An aggressive technology policy comprises a pre-emptive, long-range strategy for technological innovation (Ettlie et al., 1984). Radical innovation creates an unknown or untapped market space, which is defined as a blue ocean (Chan Kim & Mauborgne, 2005). The process represents a major risk, requires extensive investments (e.g., in research and development) and the right timing. Oftentimes, development cycles are extensive. The digital camera is a prominent example for a radical innovation. Nikon disrupted the market and significantly threatened Kodak, which did not consider them as a competitor before (BMI Lab, 2017).

The impact of technological innovation determines our daily lives and thus has the potential to improve life quality. However, it should serve the customer's needs and demands to ensure a positive impact.

2.1.3. Customer centricity in technological innovations

In recent years, organizations' focus shifted from product centricity to customer centricity. The concept of customer centricity implies that fulfilling the customer need is at the core of the organization compared to a concentration on selling products. The shift is due to several aspects such as growing competition, more educated customers, and accelerating advances in technology (Shah et al., 2006). When focusing on the product only, organizations prioritise production efficiencies. Opposed to that, customer centricity requires the focus on customer satisfaction, customer service, customer loyalty and perceived quality by the customer. Holistically understanding the customer is an essential prerequisite for gaining competitive advantage and selling products that create value for both, the customer, and the organization (Shah et al., 2006). However, traditional processes in place to detect customer needs might disguise the attention to new technologies in emerging markets, which do not initially meet the market demand. Technologies that might harm established companies are typically not radical innovations but offer a different package of performance attributes that are not yet valued by existing customers. They only start to value the technology if the new technology outdates the current market and their market positioning is being threatened (Bower & Christensen, 1995).

This presents a risk for established companies being eliminated by new players, such as start-ups.

The implementation of technological innovation requires a balance of customer needs and market circumstances, while setting innovation goals and managing the risk.

2.2. Innovation in the retail industry

2.2.1. Disruption of retailing

Retail describes the process of directly selling a product or service to the consumer. The transaction can happen through different channels, e.g., online, offline (brick-and-mortar stores) or direct sales. There are four retail categories: Hardlines (e.g., appliances, cars, furniture), soft goods and consumables (e.g., clothing, toiletries), food and art (Shopify, n.d.). Online retail cannot be equated with e-commerce, as the notation of e-commerce entails Business-to-Business (B2B), Business-to-Consumer (B2C) and Consumer-to-Consumer (C2C) models. Online retail is one mode of B2C (Abdulkadim Altemimi & Hassin Alasadi, n.d.).

Traditionally, retail consists of several tasks and flows, e.g., product sourcing, inventory management, distribution, picking and payment (Burt & Sparks, 2003). With the dissemination of the internet, companies such as Amazon, disrupted the market, replaced traditional brick-and-mortar retailers (Shankar et al., 2021) and increased task efficiency. Technology has accelerated the transformation of the whole retail industry. The trend exacerbated with the outbreak of the COVID-19 pandemic in 2020, influencing the supply and demand side, and delivery as a connection between the two perspectives. On the supply side, technologies such as robots and drones fulfil warehouse operations. The demand side spawns e.g., consumer choice assistance, personalised recommendations, and e-commerce (Shankar et al., 2021). In addition, customer perceptions and behaviours are changing. Retailers are required to meet the needs of customers (Rømmen Anderssen et al., 2021). Applying emerging technologies, such as robotics, 5G, Virtual Reality (VR), AI or Internet of Things (IoT), as a core part of the business model significantly improves the customer experience. The technological adaption leads to traditional retailers not being competitive anymore. In the United States, 30,000 retailers closed their stores between 2018 and 2021. To remain competitive, retailers must ensure customer convenience at every touchpoint of the value chain (Rømmen Anderssen et al.,

2021). In 2021, online retail passed 8 trillion US dollar worldwide with digital/mobile wallet as the preferred payment method (Coppola, 2022).

The retail industry underwent a process innovation enabled through technology, allowing the emergence of new business models and causing a shift of consumers transferring from offline to online retail. However, the underlying process of B2C retailing remains the same (Burt & Sparks, 2003).

2.2.2. Convenient customer checkout

The term checkout refers to completing the purchase, which includes the payment process. Main stakeholders of this process are retailers, customers, and payment provider.

During the last decades, the type of payment in offline checkout changed. Technology and alterations in regulations enabled retailers to shift from paying cash to mobile payments. Mobile payments benefitted from e.g., near-field communication (NFC) technology, which enables contactless payment and heralds the next generation of credit cards (Shankar et al., 2021). Payments with smartphones (e.g., Apple Pay, Google Pay) made physical cards obsolete. In offline retail, customers still pay at the counter and the process requires human resources. This shifts towards implementation of self-checkout counters, which can positively impact the customer-experience (Fernandes & Pedroso, 2017).

Online checkout can be separated into flexible checkout and restricted checkout. Flexible checkout means that consumers complete the purchase by logging into their account or by indicating that they are a guest user. With a restricted checkout consumers set up an account or log into their existing account before being able to purchase (Sajeesh et al., 2021). During the registration, consumers fill in data such as e-mail address, shipping address and billing data. This is a one-time process as the data can be stored. The same accounts for the payment process. Consumers can choose their preferred way of paying from multiple options. Over the last years, the options have changed significantly. From Single Euro Payments Area (SEPA) transfers to instant payment solutions, it is crucial for retailers to meet the customers' expectations of their preferred type of payment to decrease shopping cart abandonment. Thus, the payment process is the most important part of the checkout. With introducing Amazon Cash, Amazon offers a prepaid account for purchases on Amazon.com. Prior to checkout, customers preload cash to their accounts which then can be used for payments (Oliver Wyman, 2019). Next to traditional

credit card payments there are solutions such as PayPal, Apple Pay or Klarna revolutionising the payment process. The Swedish FinTech Klarna offers payments within 30 days and so-called buy-now-pay-later (BNPL) solutions, which provides customers with more flexibility in their purchases. Customers can manage the payments directly in the Klarna app and settle the invoices with a few clicks. This contributes to a convenient customer experience and therefore puts pressure on the retailer to provide this payment option to the customers.

Amazon Cash and Klarna are examples of a digitised online checkout. A lot of development is happening in online retail, with the aim of creating the most enjoyable shopping and payment experience for the customer to gain and ensure a competitive edge.

2.2.3. Market barriers

The retail industry focuses on customer centric innovations. The main objective is to attract and retain customers by making the customer experience as convenient as possible. As retail is a private sector and there are just few legal restrictions, the adoption rate of new innovations is high. In addition, the market is highly competitive, further aggravated by the offline to online shift including the changing consumer behaviour. This likewise contributes to a fast adoption of new innovations and emerging technologies. Compared to offline checkout, retailers must cope with privacy concerns of their customers, leading to fewer people willing to share their data during the checkout process. This can be overcome with the guest checkout option (Sajeesh et al., 2021).

In general, the market barriers mentioned above do not prevent innovation in the retail industry from happening, especially concerning payment processes. In healthcare, there is a similar checkout process for medical clinics if a payment is involved. Efficiency is particularly important so that medical staff and patients do not have to cope with complex administrative effort.

2.3. Innovation in the healthcare industry

2.3.1. From legacy to eHealth - development of the healthcare industry

Healthcare is defined as the service delivery from medical professionals to patients to sustain physical and mental well-being (Kraus et al., 2021). Most of today's healthcare systems

originate from the 20th century. For instance, the social healthcare system in Germany is one of the oldest ones in the world, initially established in 1883 (OECDE/European Observatory on Health Systems and Policies, 2017). With the increasing technological development, it becomes clear that the outdated legacy systems do not meet the requirements of today's world but are off-the-shelf solutions assembled when needed. There is no interoperability on a national and international level. Enterprise architecture, service management, high-scale operation capacity, international cooperation, cybersecurity, data privacy and ethical surveillance are required to build digital health systems (Martins, 2020). Although some minor innovations happened over the last years, there is tremendous potential to develop a digital health system.

The World Health Organization (WHO) released a global strategy on digital health urging member states to propose a framework to develop and implement eHealth services, especially focusing on coping with the challenges of today's knowledge society (World Health Organization, 2021). The knowledge society is a result of the rapid development of information and communication technologies (ICT) and embraces digital connection on a global level (UNESCO, n.d.). The objective is to increase the universal health coverage by 1 billion people (World Health Organization, 2021). The WHO names the healthcare industry as one of the most relevant industries for digital transformation, which allow the emergence of new business models for service delivery (World Health Organization, 2021). While Portugal already introduced e-prescriptions in 2015 and banned paper-based prescriptions in 2020 (Martins, 2020), Germany lacks behind. E-prescriptions are expected to officially launch in 2023. Service delivery in healthcare offers several points of contact for implementing new innovations. The fourth industrial revolution (Industry 4.0) and technologies such as Artificial Intelligence (AI) impact such process transformation (Kraus et al., 2021), applied in areas of electronic record taking, tele-health, monitoring equipment (e.g., portable devices), electronic communications, web- and cloud-based tools, and data analysis (Marques & Ferreira, 2020). The resulting impact concerns the treatment itself, medical professionals, and the organization's productivity (Marques & Ferreira, 2020). It provides significant potential to increase the quality of care and positively impact economical aspects (e.g., automated routine tasks) (von Eiff & von Eiff, 2020). To ensure transparency, accessibility, scalability, replicability, interoperability, privacy, security and confidentiality, the WHO defined characteristics of digital health. Therefore, digital health must be ethical, safe, secure, reliable, equitable and sustainable (World Health Organization, 2021).

Although offering remarkable potential, the healthcare industry is still not as much digitised as it would be beneficial for stakeholders. The business model of service delivery takes place offline. The shift to online service delivery has so far remained absent. Digital transformation is essential to improve the quality of care and efficiency and productivity of service delivery (Marques & Ferreira, 2020). This is especially interesting for the German market, as there is a special structure of healthcare payments in medical clinics.

2.3.2. Healthcare market in Germany

2.3.2.1. Structure

In general, the German healthcare system follows four main principles: compulsory insurance (statutorily or privately), contribution financing (by the insurance members), principle of solidarity (all costs are borne by the community), principle of benefits in kind ("Sachleistungsprinzip", no advance financial payment for persons with statutory insurance) and self-governance principle ("Selbstverwaltungsprinzip"; the government only provides the framework conditions and the actors organize themselves) (Bundesministerium für Gesundheit, 2020, p. 9 f.). Statutory and private are the two main types of health insurances that reflect these principles (Bundesministerium für Gesundheit, 2020). Initially, the statutory health insurance was established in 1883. Later, it was further developed, e.g., with corporatism. Corporatism describes the regulation of the system by associations of health insurers and service providers (Gerlinger, 2017). More than 87 % of Germany's citizens are statutorily insured (Bundesministerium für Gesundheit, 2020, p. 24). Every member of the statutory health insurance receives the same type of medical treatment. However, the monthly contribution depends on the salary of the insured persons (Bundesministerium für Gesundheit, 2022a). Compared to the solidarity principle of the statutory health insurance, the premium of the private health insurance depends on the individual health risk of the insured person (equivalent principle). In addition, treatment cost needs to be covered by the insured person and are reimbursed after invoice submission (Bundesministerium für Gesundheit, 2022b). There are several health services, that are not covered by the health insurance, so called IGeL services (individual health services). These are services that do not promise a sufficient benefit (e.g., complete blood count during the general check-up) (Bundesministerium für Gesundheit, 2016).

Germany has the highest expenditure per gross domestic product (GDP) in the European healthcare market (11,7 %). From 2012 to 2019 Germany's healthcare expenditures increased

by 35 % to more than EUR 400 billion. When looking at the financing schemes, a major part of the expenditures (78,1 %) are financed by above mentioned compulsory contributory healthcare insurance. Household out-of-pocket expenses account for 12,7 % (Eurostat, 2021). This leads to a market size of EUR 50,8 billion solely for out-of-pocket expenses that must be paid by citizens in Germany (Næss-Schmidt et al., 2021).

2.3.2.2. Online "checkout" in medical clinics

The term *check-out* is well known in the field of e-commerce. As described in chapter 2.2.2 it explains the process of a customer confirming the order, conducting the payment and thus, legally closing the contract with the retailer. In medical clinics in Germany, the term check-out starts to become more popular. This thesis considers the post-treatment phase as the checkout, which includes issuance of invoices for treatments and its payment, as those are processes that can be improved by (private) health organizations and start-ups. Therefore, the focus lies on out-of-pocket expenses for treatments in medical clinics in Germany. The insurance perspective will not be discussed. Linking the checkout process with the literature, it can be considered as a part of medical billing. The billing process from a clinic perspective consists of three steps: general medical billing process, billing control process and after sampling invoice and relevant document preparation process (Dasdemir et al., 2013). The patient either directly pays the invoice amount after treatment at the clinic reception or waits for the invoice to settle the bill in a set timeframe. The billing process in medical clinics is complex and resource-intensive and billing systems are prone to fraud (Kumar et al., 2018).

There are a few companies already working on digitising payments during the checkout in clinics, such as Cedar Cares in the US or Nelly Solutions in Germany. Using an online checkout for the delivery of (offline) healthcare services is not yet common practice in the healthcare sector, especially in Germany. However, as the service delivery still takes place offline, the online checkout integration into the offline process cannot directly be compared with the checkout in online retail. Recent actions of an offline to online shift can be observed in Portugal. The country introduced a National Health System (NHS) which made the country leading in eHealth in Europe. Telehealth plays a crucial role to support the shift to eHealth to provide better access, convenience, and efficiency (Martins, 2020). Telemedicine evolved to be used as a remote clinical consultation, although its potential for application in the medical sector reaches beyond that (Perednia & Allen, 1995). Telemedicine has the potential to significantly

improve the customer experience in healthcare services as it, for example, helps to avoid unnecessary commutes to the clinic. COVID-19 accelerated the adoption rate of telemedicine, but there is still potential (McKinsey & Company et al., 2022). However, telemedicine might be central for implementing an online checkout. In Germany, there is currently no digital online checkout including convenient payment solutions for patients available. To build such a digital health system, it is crucial to transform processes, professionals, and patients. Stakeholders must question physical interaction in healthcare. Data security and interoperability are basic requirements for new digital systems to ensure secure processes (Martins, 2020).

Although there is great potential and aims to further digitize the healthcare industry, the checkout processes still require manual effort up until now. While patient behaviour is changing and more patients acting as digital consumers may start demanding digital solutions and streamlined processes. Healthcare is a public market and therefore the forces of competitive advantage play only a minor role compared to a private market. It still is essential to react to patients' behaviour when looking at the bigger picture and apply the concept of customer centricity, which is part of the concept of Quality-of-Care as it includes patient experience beyond the clinical and medical dimensions. To build a billing system that satisfies the patients' needs, their needs must be taken into consideration. For clinics, this has the advantage of reducing the administrative effort and therefore the costs. Furthermore, potential upselling of other services and the collection of data become an opportunity.

2.3.2.3. Factoring

Factoring is an incremental part of the German medical billing structure and widely used by medical clinics. One third of all dental clinics in Germany uses factoring services (Buske, 2022). Factoring is a type of supplier financing and describes the process of a company (e.g., medical clinic) selling its claims to a factoring company, which transfers the invoice amount deducted by a fee immediately to the company. Typically, only creditworthy accounts are sold through factoring. As soon as a clinic issues an invoice for a treatment to a patient, this constitutes an illiquid asset. The resulting illiquidity can be overcome by using factoring services. Thus, factoring ensures financial liquidity regardless of the payment terms of the patient.

There are two types of factoring: non-recourse and recourse. In non-recourse factoring, the factorer (lender) assumes the claim including default risk of the account whereas in recourse

factoring the lender does not assume the default risk. In the latter case, the default risk stays with the clinic (Klapper, 2006). In general, factoring comprises the following financial services: credit protection, accounts receivable bookkeeping, collection services and financing (Klapper, 2006). As the success of the factoring model as a financial service is, amongst other aspects, highly dependent on the creditworthiness of the patients, the average ratio of factoring to GDP is higher in high-income countries such as Germany. In turn, factoring plays an important role for the economic development of a market as it ensures financial liquidity for companies. To succeed as a factoring company, sufficient credit information of the customers (e.g., patients) are required (Klapper, 2006).

As of now, factoring services in Germany depict a part of the checkout process that is not entirely digital, especially with respect to the patients. Market players such as Health AG or BFS health finance GmbH still send physical invoices to patients. Thus, the checkout is only partly online.

2.3.3. Reasons for innovation constraints in checkout in medical clinics

Technology provides untapped potential for application in healthcare to foster innovation, streamline processes and improve the quality of medical care and workplaces. Reasons lay in the characteristics of the healthcare market. The healthcare market is fragmented with different stakeholders being the decision makers, operates with isolated solutions and has strict legal requirements, especially regarding data protection (Gerlinger, 2017). The resulting market barriers constrain or obstruct innovation in payment processes in medical clinics in Germany.

1. Low standardisation and interoperability

To enable interoperability, the ability of systems to communicate with each other, standards for usage and connectivity of digital systems must be enforced. This is not yet the case in Germany. There is no sufficient amount of "open integrations" that enable the communication of different systems (Gematik, n.d.).

2. Communication and transparency

The communication between patients and physicians is laborious due to a lack of data availability (Kohli & Swee-Lin Tan, 2016). There is no digital documentation of the treatment and diagnosis that can be made available to the patients. It is not even a

requirement to use a digital tool (e.g., practice management system) for record keeping. Clinics can manually write things down in so-called index cards. Further, there is no overarching solution to (digitally) exchange information between different clinics or hospitals.

3. Data security

To securely exchange sensitive data such as health data, strict data privacy and security regulations are crucial (World Health Organization, 2021). Interoperability, data security and privacy are key challenges when it comes to patient data (Kumar et al., 2018).

4. Legal frameworks and policy

Legal frameworks are required to increase the expansion of digital health and provide guidance for stakeholders. Germany's ministry of health introduced four e-health laws since 2021 which aim at laying the foundation for further expansion of digital infrastructure (e.g., "Gesundheits-IT IOP-Verordnung", "Digitale-Versorgung-und-Pflege-Modernisierungs-Gesetz"). However, the implementation is gradual and thus slow (McKinsey & Company et al., 2022).

The aspects mentioned above constitute general barriers that affect the whole healthcare sector. With special attention to payments, health insurances and out-of-pocket expenses provide particular challenges. As the type of insurance and the treatment (e.g., out-of-pocket expenses) differs from patient to patient, the payment is highly case-dependent. In addition, Germany faces the anomaly that people with higher incomes are free to leave the statutory health insurance and shift to the private one. This makes a payment system more attractive for clinics with a higher ratio of privately insured persons.

The development of a payment system is limited to payments that are out-of-pocket expenses or privately insured services. Therefore, the checkout process in medical clinics does not follow a stringent structure and exacerbates digitisation.

The discussed theory shall be assessed with interviews and complemented with the insights from patients and practitioners in medical clinics.

3. Methodology

It is questionable if the delivery of healthcare services even needs a shift to online to fully compare the checkout in the two sectors or if an implementation of at digital payment system would be as easily integrated offline which would result in an improved patient and clinic experience. Departing from the theoretical and contextual background some of these ideas helped inspire the interviews as data collection instruments to assess participants perspectives, complemented with the insights from patients and practitioners in medical clinics, which then serve as a basis for comparison and reflection with empirical data collected. The research questions are tested with a qualitative research method (i.e., qualitative interviews that follow a guideline).

3.1. Data collection

This study uses semi-structured interviews, which are structured but allow open ended question (Britten, 1995). Qualitative interviews allow to gain in-depth insights into the research topic. As this study aims to explore the needs of the different stakeholders, detailed insights in thoughts and expectations are required to answer the research questions and uncover new insights that are not yet discussed in the existing literature. Disadvantage of this research method is the low standardization and therefore low comparability of the interviews. The interviews are not statistically representative (Britten, 1995). However, for this use case the advantages outweigh the disadvantages and thus the method is appropriate for this study and provides the most valuable and in-depth insights in terms of why and how the payment process could be transformed. In addition, it allows to further explore a particular topic compared to the appliance of standardized methods. The findings should lead to implications for a payment model that meets today's stakeholder needs and provide market instructions for healthcare organizations which develop digital health solutions.

3.1.1. Selection of interview partners

The aim of qualitative interviews is to explore the subjective views of individuals. Therefore, the interviews do not necessarily have to be representative. Nevertheless, interviews can be used to derive statements that can be generalized to a certain extent. To ensure comparability of the interviews and sufficient contribution of interviewees, specific selection criteria to interview partners apply. First, the interview partners are clustered in two main stakeholder

groups to ensure customer (and user) centricity: clinics (practitioners or employee responsible for billing) and patients. The sample of clinics differs in its specialisation but was chosen based on personal industry contacts. The patients are clustered in three age groups: 18 to 40 years old, 41 – 60 years old, > 60 years old. Reason for this is that patient behaviour and preferences varies in different age groups as they show different technological adaption and life circumstances. In total, the sample of this study consists of 6 clinics and 9 patients in Germany, leading to a sample size of 15 interviews.

3.1.2. Interview guideline

The theoretical discussion provides a basis to build categories to structure the interview and guide the conversation. These deductive categories build the preliminary category system, which is a central element of the analysis. It allows the intersubjective comprehensibility of this study.

The interview guideline covers the following categories:

1. General
2. Payment today
3. Payment in the future

The first interviews were conducted as pilot interviews to test and improve the questionnaire. Based on the pilot interview, the guideline for medical clinics was complemented with requestions regarding administrative tasks and feedback from patients. The pilot interview for patients showed that some questions did not sufficiently contribute to answer the research questions. For example, the question when the patient visited a clinic the last time does not matter in this context. Thus, the guidelines were adapted accordingly. Pilot and final questionnaires can be found in the appendix.

3.2. Data analysis

In the first step of the analysis, the interviews were conducted in German as the study focuses on the German market following a selective transcription process. The selective transcription focuses on interpretation and generation of meanings instead of transcribing every single word (Halcomb & Davidson, 2006). Although this method reduces the complexity, there might be a

loss of interpretation. Still, this is a reasonable approach for this study because it allows sufficient gain of knowledge. The second step of the analysis involved translating the key messages for every question into the English language and documenting them in the data collection table (see appendix). A number is assigned to every interview to ensure anonymity which serve as references in the analysis of the findings. Further, the analysis only reflects verbal words. Paraverbal actions (gestures, tonality etc.) did not have an impact. The third step involved the assignment of relevant key messages to categories following an inductive approach. In addition, so-called member checks with informants from the healthcare industry supported the interpretive scheme (Dacin et al., 2010). The informants verified the findings and recommendations independently.

4. Findings

4.1. Need for technological change

The first RQ asks if there is a need for digital payment processes in medical clinics in Germany. Interviews with patients show that they associate the clinic visit with problems such as appointment scheduling or finding the right clinic for the specific needs [1.9, 1.7]. Explicitly asking for challenges in the payment process, a few interviewees mentioned that they do not face any challenge [1.2, 1.3, 1.5]. However, patients receive almost every invoice for a treatment physically by mail [1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9]. Asking for an ideal payment process, respondents said that they wish for a digital process [1.5, 1.6] and want to pay directly in the clinic [1.1, 1.2, 1.3]. All interviewed clinics outsource the issuance of invoices to factoring companies, which they are satisfied with as it relieves them from administrative burden [2.1, 2.2, 2.3, 2.4, 2.5]. The transmission of billing data to the factoring company happens mainly digitally [2.1, 2.2, 2.3]. Some clinics stated that they do not know how the process should be improved further [2.1, 2.2, 2.4]. However, one interviewee stated the system legacy and said that the billing system in Germany has been around for over 18 years [2.1].

4.2. Developing a convenient payment process

The interviews with patients and medical clinics are analysed based on inductive categories to answer RQ2 *"What is required by patients and medical clinics to achieve a convenient payment process and what are recommendations for software developers and healthcare organizations*

to implement a customer- and user-centric payment system?" For a convenient payment process, needs of both stakeholders must be taken into consideration. It is essential to transfer their needs into one process. Thus, both perspectives are pooled in an aggregated theoretical dimension. Table 2 provides an overview of the findings.

Patients		Aggregate theoretical dimensions	Medical clinics	
First-order categories	Second-order themes		Second-order themes	First-order categories
Physical invoice is received by mail sometime after the treatment.	Payment availability	Process	Payment availability	Factoring services are involved in the payment processes.
Challenge starts before the actual clinic visit with finding the right clinic for the respective purpose and schedule an appointment.	Appointment scheduling		Billing erros	Errors in billing are a concern, because regulations change frequently and employees must educate themselves.
			Administrative burden	Clinics do not have time to spend more time on billing (e.g., to double-check invoices) and processes are too complex
Patients do not have homogenous payment preferences, no matter their age group.	Payment preferences	Perceptions	Payment preferences	Factoring solutions are preferred because they relieve the administrative work.
Treatment and payment in the clinic is not transparent enough.	Transparency		Transparency	The aim is to increase transparency for patients, but regulations restrain scope of action.
More sensitive when it comes to medical data.	Data privacy		Feedback from patients	Privately insured patients are used to factoring process while statutory health insured patients question the process more often.
Payment process needs to be more attractive.	Gamification/incentivation	Stimuli	Payment moral in the current economic situation	They perceive a change in patient (payment) behaviour which differs for the different types of clinics.
Visiting a medical clinic is not an enjoyable experience for patients.	Psychological factors			

Table 2: Interview data structure ((framework based on Dacin et al., 2010); Source: Interviews).

4.2.1. For patients

The following paragraphs present the seven categories (second-order themes), that were derived from the patient's statements, clustered as outlined in table 2.

Process

   1. Payment availability

Currently, all interviewees receive physical invoices by mail sometime after the treatment, sometimes including a payment form to fill and hand in at the bank. Occasionally, it takes up to weeks until they receive the invoice. This causes friction in the payment process as patients might forget to settle the invoices and might receive reminders [1.6]. Or they need to pay attention that they enter the payment data correctly [1.9, 1.5]. [1.9] stated that the invoice for the professional teeth cleaning treatment is the only invoice in the course of the year that needs to be paid manually. Especially the younger age group has to keep track of those rare physical invoices, because they tend to manage their spendings completely online and thus it does not appear in the normal expenses [1.7].

2．Appointment scheduling

For patients the challenge starts before the actual clinic visit with finding the right clinic for the respective purpose [1.7]. It continues with clinics not having a proper website with information that are relevant for a potential patient (e.g., services, practitioners, reviews, option to schedule appointment online) [1.7]. Especially for specialists scheduling an appointment is impossible [1.7]. In addition, there is no digital interaction between different clinics, e.g., when patients get transferred from one specialist to another one [1.7].

Perceptions

3．Payment preferences

The interviews provided insights that there are aspects that influence patients' satisfaction with the payment process. First of all, patients prefer to complete the whole process directly in the clinic. If they receive the invoice only a few days or weeks later, there is a risk that they forget to pay them at all [1.6]. Instead of typing in the invoice data themselves in their online banking, patients wish for a digital connection through smartphones (e.g., with payment link) so that they can click on a link and directly pay by mobile phone [1.6]. Another suggestion from an interviewee [1.7] was that the clinic provides a digital service (e.g., website, app) where the invoice will be shown, and different payment options are offered. [1.1] mentioned that for her the invoice amount makes a difference. For higher amounts (> EUR 500) she wishes to have the option of installment payments. After completing the payment, two interviewees mentioned they want a proof that the payment was completed successfully [1.4, 1.5]. Table 3: Payment preferences of patients (Source: Interviews). outlines the preferred payment method of patients. There is no obvious pattern, as interviewees from the youngest age group said they prefer to receive invoices and transfer the amount through online banking afterwards and interviewees from the middle age group said they would prefer to pay with PayPal.

Interview	Age group	Payment preference
1.1	18 - 40	Mobile phone (e.g., Apple Pay) in clinic
1.2	18 – 40	Direct payments in clinic
1.3	41 - 60	Debit card in clinic
1.4	> 60	Invoice + online banking afterwards
1.5	41 – 60	PayPal or online banking
1.6	18 – 40	PayPal or debit card
1.7	18 – 40	Invoice + online banking afterwards
1.8	> 60	Cash
1.9	41 – 60	Debit card in clinic

Table 3: Payment preferences of patients (Source: Interviews).

4. Transparency

Transparency is a huge issue when it comes to medical services. Currently, patients do not perceive the clinic visit as transparent enough. On one side, the lack of transparency refers to the treatment itself. Patients want to know what they are paying for [1.9, 1.7, 1.1]. They are even interested in what the clinic bills when the treatment is covered by the statutory health insurance because patients do not know what the treatments cost [1.9]. However, this is oftentimes obscure, as no clear data is stated on the invoice or there is no time for communication [1.9]. Especially for out-of-pocket expenses patients need to self-assess if they find them necessary although they do not have the medical literacy to do so. There is lacking trust in the clinic to tell them if they actually need the treatment [1.3]. On the other side, patients perceive a lack of transparency in the payment itself. For example, [1.5] stated that it is important to her to receive a payment confirmation to know that the invoice is settled.

5. Data privacy

For two out of nine interviewees data privacy is a concern. [1.2] stated that she is more sensitive when it comes to medical data compared to data that is asked during the checkout in online shopping. [1.4] said that data privacy especially concerns him during the check-in as patients must loudly disclose private data and the purpose of the clinic visit in front of every other patient waiting.

6. Gamification/incentivization

A few interviewees stated that they have a rather negative perception when it comes to the payment of medical services. To make the payment more attractive, [1.6] mentioned that to her incentives such as discount codes would help (e.g., 10% on the next professional teeth cleaning treatment). Discount codes are frequently used in online retail to attract and retain customers.

7. Psychological factors

Patients do not enjoy visiting a clinic. "You know you have to do them for preventive care or because you have to do them", but it feels like a coercion. "If you could live without them, you would never go to the doctor" [1.9]. In addition, [1.5] mentions that she does not trust the clinic at all. The clinic visit constitutes a mental issue. Patients expose themselves to the processes and conditions and accept them, because they need to go there to improve their well-being. The well-being is considered much more valuable than thinking about the processes or payment methods [1.9]. With regards to payment, patients want to pay only after they received the treatment and not before, although it would not change anything. "The service has to be done before paying for it" [1.3].

4.2.2. For medical clinics

The following paragraphs present the seven categories (second-order themes), that were derived from the clinic's statements, clustered as outlined in table 2.

Process

1. Payment availability

Every interviewed clinic has a factoring service involved in their payment processes. The clinics complete the invoices and then digitally hand the data over to the factoring company. The factoring company sends the physical invoice by mail to the patient and takes care of the dunning process in case patients do not pay within the deadline [2.1, 2.2, 2.3, 2.4, 2.5]. Altogether, clinics are very satisfied with this process because they

do not have to spend much time with it. Factoring also ensures the clinic's liquidity and allows them to pay other invoices with an early payment discount ("skonto", e.g., for dental technicians) [2.4]. Due to smooth processes, clinics try to outsource as many invoices to the factoring company as possible, some clinics more than 80 % or 90 % [2.2, 2.5]. Besides that, some clinics offer the possibility of direct payments with EC card (sometimes even credit card or ApplePay), which is mostly used for amounts below EUR 150 - 200, e.g., a professional teeth cleaning or a filling [2.2, 2.3, 2.4].

2. Billing errors

Errors in billing are a concern for medical clinics. As rules and regulations for billing change frequently, employees responsible for creating the invoices must educate themselves about those changes. For clinic [2.1], the billing should be more effective. The billed positions should be checked daily, but there is a permanent employee required to do that [2.1]. Those billing errors are disadvantageous for the clinics as they lose money with it [2.1]. Besides the time constraint, another reason for errors has been mentioned in the interviews. Billing is not taught during the medical studies and after that supervisors are not really interested in passing on such knowledge, as it is an "incredible amount of work in Germany" [2.4] and they are not keen to know how much turnover they generate [2.4].

3. Administrative burden

The COVID-19 pandemic further increased the administrative burden that clinics face. Billing has become more burdensome, e.g., introduction of new digits, deletion of digits [2.1]. To stay up to date, clinic staff must check the regulations in the spare time because they do not have time for it during the typical workday [2.1]. They would even like to spend more time on billing (e.g., to double-check invoices) but there is no time for it and processes are too complex [2.1]. Experienced staff is much more efficient in correctly performing the tasks [2.4].

Perceptions

4. Payment preferences

Clinics aim to keep the administrative effort as low as possible, as they need the capacity to focus on performing the treatments. Therefore, they prefer to use factoring solutions

because they relieve them from a lot of work. Clinic [2.3] stated that approx. every third patient does not pay the invoice. Although factoring is rather expensive, it in turn pays off because they have a reliable liquidity and less effort [2.2, 2.3, 2.4, 2.5]. One clinic mentioned that they do not want to have cash, even though they know that some patients prefer to pay in cash [2.1]. Another one mentioned that it is important for them how the patients perceive the payments, as they only have patients with out-of-pocket expenses or privately insured patients. They are already using a digital solution to onboard patients prior to the treatment which also asks for their preferred payment method. In the beginning they only provided credit card and direct debit as payment options, but quickly realised that they had to add invoice to keep the patients happy. Interestingly, patients always choose the invoice option [2.5]. In addition, the clinic indicated that they prefer direct payments on site, although there is not always the time to do the payment and thus it is easier to just send the invoice [2.5]. Table 4 shows the clinics' preferences when it comes to direct payments. The clinic's preferences align with the patient's preferences of paying directly on site.

Interview	Clinic type	Preference for direct payments
#1	General medicine	No payment in clinic available, billing through factoring company
#2	Dental clinic	EC card or cash
#3	Dental clinic	EC card due to lower fees
#4	Dental clinic	EC card as it is the most convenience for patients
#5	Naturopath and osteopathy	EC card due to lower fees

Table 4: Clinics' payment preference for direct payments (Source: Interviews).

5. Transparency

One of the clinics mentioned that they aim to increase the transparency for the patients. Clinics must adhere to certain guidelines and rules when it comes to billing and issuing invoices. This is oftentimes so complicated that patients cannot really retrace what the clinic is charging them. Clinics receive a lot of inquiries from patients who are asking for explanation or clarification [2.2].

6. Feedback from patients

Clinics receive feedback from patients related to the billing/invoicing process. The feedback differs and is not always directly linked to the processes. Privately insured

patients are already used to the practice of receiving an invoice from a factoring company and therefore do not question the process [2.1, 2.5]. Statutorily health insured patients sometimes do not understand why they need to wait for an invoice and prefer to pay directly in the clinic instead [2.1]. Some factoring companies are fast with sending the invoice and this is sometimes perceived a little strangely by patients [2.3]. In addition, patients must sign for the claim assignment from the clinic to the factoring company. One clinic stated that patients ask why they have to provide so many signatures and what they are actually signing for [2.4]. Another interviewed clinic said that patients tell them they want to pay directly in the clinic, because they want to "get it out of their head" [2.2].

Stimuli

7. *Payment moral in the current economic situation*

Clinics mentioned the current economic and political developments (COVID-19, energy crisis, war in Ukraine, inflation) as one of the main challenges they currently face [2.2, 2.3, 2.5]. They perceive a change in patient (payment) behaviour. For the case of the alternative practitioner, every treatment must be paid by the patients. Thus, they are even more affected by these challenges. To cope with that, they adapted their treatment offers (e.g., price bundles, online consultation) [2.5]. Dentists instead are surprised what patients are still willing to spend money on when it comes to their teeth. At the moment, they still attach great importance to aesthetics [2.2]. One clinic mentioned that they are generally very dependent on the revenue streams from self-payers and privately insured patients. Without them, they would not be able to maintain the clinic. Their financials reflect if no private payments are coming in for a while. "However, the goal of increasing the share would ethically speak against what we consider to be right. From a purely economic point of view, a single clinic (in medicine it should not have to be considered purely economic) would have no chance of surviving with just health insurance benefits" [2.4].

5. Discussion

5.1. Analysis of results

This study assumes that payment processes in other sectors are more advanced than in healthcare and that it is as easy to pay in healthcare as it is in other sectors. Therefore, three research questions were examined. The following paragraphs are structured according to the research questions and answer and discuss them.

> *RQ 1: Is there a need for technological change of payment processes in medical clinics in Germany?*

The findings indicate that especially clinics are satisfied with the payment process. Although patients wish for a digital process, they do not see a challenge in the payment process in general. Therefore, it can be assumed that there is no need for technological change of payment processes.

These results are contradictory to the hypothesized association that the healthcare sector in general and the payment processes in specific lack technological innovation. Although studies show that Germany misses essential prerequisites for digitization (Bratan et al., 2022), it is not perceived as urgent by clinics and patients. However, when examining the payment process, it becomes clear that the checkout in medical clinics is deficient compared to industries such as online retail (see chapter 2.2). Factoring providers still send out physical invoices to the patients. Transforming the manual, cost- and resource-intensive process allows clinics to improve their efficiency and thus contributes to a better quality of care. Clinics' primary goal is to be relieved from administrative burden, independently of digitization opportunities. Dealing with the pressure on medical staff to cope with the increasing workload is more important than digitising any process. As they are one of the main decision makers in the innovation process and operate as if they are not dependent on the opinion of the patients, this leads to a constraint in innovation. The technological impotence of medical clinics in Germany has different causes. Healthcare providers (such as factoring companies) do not push technological innovation into the market as they still rely on paper-based processes. In addition, healthcare systems in Germany are legacies. Those are difficult to transform, because the different principles (see chapter 2.3.2.1) feed friction in the process of introducing innovation. Decisions depend on various stakeholders and go through extensive political levels which leads to a slow innovation process (Bratan et al., 2022). For new innovations in healthcare, the diffusion should involve fewer decision makers as described in chapter 2.1.1. In general, there

are some important developments happening (e.g., "Telematikinfrastruktur"), but they are not sufficient to streamline processes quickly and easily and they rather focus on broader issues than on payment processes in specific. Germany has to reduce bureaucracy to enable faster implementation of new innovations.

Still, the findings relate with the theory discussed in chapter 2.3. Patients and clinics not seeing the need to introduce technological innovation fits with the assumption that the healthcare sector constrains digitization as it lacks stimulus and knowledge. However, there is a non-verbalized need for change that could be observed during the interviews. While saying that they are satisfied the situations as they are because they cannot change anything about it, they subconsciously express that they desire change, but think it is not possible in the healthcare sector in specific. When providing payment process examples of industries such as online retail they suddenly can imagine those processes in medical clinics.

Developing digital healthcare services for medical clinics is a process innovation that can generally be considered as incremental innovation because it advances already existing processes. To improve the adoption rate of such innovations, the solution must provide a clear return for the clinic and thus solve the main pain points (administrative burden). It also helps to point out the competitive landscape. According to Roger's (1995) diffusion theory, the more clinics already use such solutions, the more likely other potential clinics are to adapt the solution, too. However, there is potential for radical innovation, if, for instance, payments can be done using cryptocurrency (e.g., bitcoin).

> *RQ 2: What is required by patients and medical clinics to achieve a convenient payment process and what are recommendations for software developers and healthcare organizations to implement a customer- and user-centric payment system?*

Generally, patients and medical clinics aim for a payment process that does not require much time and that they can complete directly with the treatment. More specific, patients want the freedom to choose from different payment methods, transparent information about what they pay for and high data privacy standards. Clinics want to keep their administrative effort as low as possible and try to bill as correctly as possible in their daily work routine. They prefer to outsource their billing processes to factoring companies to reduce the administrative effort. In addition, they need to increase their capacity to do the billing pre-work more conscientiously and hereby reduce errors, which are largely to their disadvantage.

The findings suggest that when thinking about challenges related to the clinic visit, patients do not think about payment at all. Processes, such as appointment scheduling, come to their minds much sooner. Even though they are annoyed, patients accept the situation because "it's the doctor" and it has always been like that. Patients perceive clinics as a „bubble" that cannot be changed and that is not worth to complain about. This puts clinics in a powerful role. The bad public-service-culture in Germany influences the convenience if there is no motivation to improve the (patient) experience and nobody feels responsible, and it is just not considered important. However, from an economical point of view it makes sense to invest time in streamlining and digitizing processes to increase the overall operational efficiency to eventually improve the patient and workplace experience. Overworked medical staff is a capacity restraint for service delivery. A digital payment process not only improves the overall experience but can help to attract new medical staff as the administrative workload can be decreased.

The structure of the German healthcare system can be a competitive advantage or disadvantage for clinics. For clinics that highly depend on out-of-pocket expenses and privately insured patients it is economically reasonable to attract such patients. However, this is against the ethical common sense, also because almost 90 % of the German civilization depend on the statutory care. Medical clinics have the obligation to ensure health care. This is only possible for them if they are financially sustainable and for some practices that is not possible without a sufficient number of self-payments. In addition, clinics differ in their payment processes and "checkouts". Occasionally (e.g., for general medicine) there is no checkout needed, as the process is completed with the treatment and no payment is required. But other clinics (e.g., dental clinics), especially smaller ones, depend on paying patients, and thus it is crucial to focus more on the patient experience and improve the clinic-patient relationship. Thus, the requirements for a convenient payment process are not the same across the medical sector.

In addition, the findings show that factoring is an essential part of the German billing system in medical clinics. Up until now, factoring companies did not take the opportunity to enhance the process as the patient experience is mostly out of focus, although it holds potential to further increase their revenues and retain customers to the services. They are mostly small and medium-sized businesses (SME). As 99,5 % of all German companies belong to SMEs, they are exceptionally important for the economy. Still, they are not driving innovation but rather focus on traditional business models. They start to focus on digitizing analogue processes which is only the first step (de:hub, n.d.). Reason for that might be that they are facing the Innovator's Dilemma (see chapter 2.1.1.). Therefore, innovative startups that challenge the status quo and

digitally combine the needs of patients and clinics have the power to implement digital solutions to fill the innovation gap in Germany, contribute to the digitization of the healthcare system and fulfil patients' and clinics' needs.

The following paragraphs provide recommendations to develop a customer- and user-centric payment system, taking into account that medical clinics would be the customer and patients would be the user. Recommendations can be derived from the theoretical discussion and the interviews with patients and clinics, but also from other industries such as online retail. Table 5 summarizes the recommendations.

What are recommendations for software developers and healthcare organizations to implement a customer- and user-centric payment system?	
Streamlining processes with a focus on sleek customer- and user-experience	
From theoretical background and interviews:	From online retail:
1. Vertically integrate the patient value chain 2. Enable the increase of transparency 3. Enable motivation of patients	4. Interconnection with FinTech 5. Analysis of conversion rates 6. Customer centricity as a priority

Table 5: Recommendations to build a customer- and user-centric payment system (Source: Interviews).

Overall, healthcare organizations should focus on customer related factors (concerning patients and clinics) such as customer satisfaction, customer service, customer loyalty, and perceived quality by the customer to maximize the potential. It is important to include the customers and users in the product development to align the needs with the current processes. The main goal should be to streamline processes while keeping in mind the customer- and user-experience.

This leads to the following recommendations based on the interviews:

1. *Vertically integrate the patient value chain*

The major pain points for customers are not related to the post-treatment payment, but rather to the pre-treatment process (e.g., scheduling appointment). To make the patients stick to the solution and enable a smooth digital experience offline in the clinic, scheduling ("check-in") and billing ("check-out") should be interrelated and lead to an end-to-end digital patient experience. Increasing the scope of the patient touchpoints around the payment allows healthcare providers to control and vertically integrate the whole value chain. The integration provides potential to further increase the revenue per patient, as clinics can offer additional services (e.g., supplementary insurances). Patients should be able to access the solution on their preferred devices, even when they are not

in the clinic (e.g., manage their invoices, schedule appointments). This creates an end-to-end patient experience that improves the administrative effort for both stakeholders tremendously and eventually increases the efficiency of the clinic visit. The advantage for the clinic is that they can manage patient related issues, such as appointment scheduling, anamnesis, administrative tasks and payments (direct payments and factoring) within one solution and improve the patient experience beyond the clinic visit, e.g., sending reminder for appointments or payments. Healthcare organizations should aim for interoperability.

2. *Enable the increase of transparency*

Increasing transparency is important for treatments that require out-of-pocket expenses for patients. In Germany, the IGeL services (see chapter 2.3.2.1) are services, for which patients must evaluate the necessity themselves. This must be addressed by the politics to improve the handling of such services. While that might be rather protracted and time-consuming, patients could also check websites or ask their health insurance, but this is quite an effort. A payment tool which includes an overview of the service before paying for it or even before starting the treatment might help patients to gain more clarity and convince them to do the treatment or choose a more expensive one. This contributes to the goal of improving the overall health and therefore relieves the burden on the healthcare system.

3. *Enable motivation of patients*

Clinics depend on out-of-pocket payments and privately insured patients. Following best practices from social media, there is tremendous potential to incentivize the younger generation with methods from online shopping, e.g., discount codes. Healthcare organizations working on such digital solutions can enable clinics to utilize customized incentivization (e.g., 10% on the next professional teeth cleaning treatment) to push them in payment methods that are more profitable for the organization or based on a prior credit-scoring. In addition, supplementary insurances are beneficial for medical clinics. These can be offered as cross-selling measures in a digital application. Target customers of healthcare organizations should be clinics which have a high ratio of out-of-pocket and privately insured patients.

Best practices from online retail can be derived and adapted to medical clinics. Although healthcare and retail are two profoundly different industries, they share the concept of a customer or a patient having to "check out". Using online retail practices to incorporate them in offline healthcare in medical clinics might imply to first achieve an online shift in the whole treatment process, e.g., through telemedicine. While some types of treatments or consultations can happen online, most of them cannot. Still, it is a good reference industry, as the checkout is a key part of the customer experience and indicates success for online retail. Medical clinics have the advantage of providing the opportunity to not digitise the entire service provision but to incorporate an online process into an offline service provision. Healthcare organizations should take the following aspects into consideration:

4. Interconnection with FinTech

Online retail offers multiple payment options. Next to traditional credit card payments there are solutions such as PayPal, ApplePay or Klarna, which revolutionised the payment process. In medical clinics, there is only the choice between receiving an invoice (typically through factoring companies) or paying directly in the clinic (typically EC card). Seamless payment solutions belong to the most important parts of the customer experience in online retail (Sobiecki, 2022). FinTech is revolutionising the financial industry by deploying digital technologies and therefore increase operational efficiency (Chen & Bellavitis, 2020). The Swedish FinTech Klarna for example enables consumers to quickly, easily, and securely settle outstanding payments immediately, later or in instalments and works closely with online retailers (Klarna Bank AB, n.d.). They gained a strong market position due to their user experience. Implementing FinTech in the value chain of a medical clinic enables them to streamline their processes and provide a better patient experience, which in turn can lead to higher ratios of out-of-pocket expenses. As patients require control over their payments, healthcare organizations should implement more flexible payment plans such as Klarna did in the e-commerce sector. BNPL can help patients to manage their financials and enable them to spend more money on healthcare. However, as this carries high risks of default, credit scoring is necessary. Combining the patient check-in with the scoring enables healthcare organizations to have a better data base and improve the scoring accuracy.

5. Analysis of conversion rates

Data analysis is essential to improve any type of process. One data point that measures the success of check-out solutions in online retail is the conversion rate. The conversion rate is the number of confirmed purchases during a specific period upon the total number of visits (unique customers) (Kapoor & Vij, 2021, p. 1). In medical clinics, data analysis helps to improve the conversion rate from issuing a cost proposal to a patient deciding for a specific treatment. The number of invoices paid can be increased through analyzing the creditworthiness and target patients who are able and willing to spend more on medical services and thus increase the invoice total.

6. Customer centricity as a priority

Online retail attracts customers by providing them with freedom to choose between different payment methods. The concept of customer centricity and focus on improving the user experience (e.g., Zalando through express checkout or 1-click ordering on Amazon) can be a competitive advantage why customers choose one shop over another. Having a customer-oriented strategy in medical clinics not only provides the opportunity for increased revenue through satisfied patients increasing the willingness to execute and pay for out-of-pocket expenses or choosing more expensive treatment options (e.g., filling at the dentist). It can also increase the overall population health when more people are willing to schedule a doctor's appointment because they enjoy the visit and perceive it as a benefit. Satisfied patients can be a competitive advantage for medical clinics.

A healthcare organization with the characteristic of a consumer health tech company can take up the requirements from patients and medical clinics and build an engaging customer experience that benefits patients and clinics alike. This person-centricity should be based on the stakeholders' freedom to express needs and the belief that change will happen. However, as patients and clinics are generally satisfied with the payment process, this would lead to maintaining the status quo. Involving stakeholders in the healthcare industry in the product development process might therefore require additional support in form of in-depth discussions and providing examples from other industries to stimulate the inertia and lack of capacity that one service that is already used in another industry can also be used in healthcare.

Germany is striving to further accelerate the digital transformation of the healthcare sector to ensure and improve the quality of care (Bratan et al., 2022). This thesis shows how crucial it is

to take the perceptions of stakeholders, including patients and medical clinics, into consideration in an in-depth manner. Therefore, any following study examining patients' and clinics' needs should be based on these fundamentals.

5.2. Conclusion

This thesis examines payment processes of medical clinics in Germany and provides needs and insights from patients and medical clinics to build a convenient payment process for both stakeholders.

Technological innovation is a crucial driver to foster the implementation of such payment processes. The acceleration of technological innovation in the retail industry, especially in online retail, over the last years shows that innovation needs to be customer centric to improve the customer experience to eventually sustain and increase the revenue. In terms of payment for customer checkout, as a lot has happened compared to medical clinics. The billing process is challenged by the structure of the healthcare industry. Privately insured persons are required to pay their clinic visit themselves and receive a reimbursement after submitting the invoice with their insurance. Out-of-pocket expenses are to be paid by every patient themselves. Usually, medical clinics outsource the invoice management to factoring companies, which still send physical invoices to the patients. To improve the customer and user experience of the entire payment process in medical clinics, this thesis used qualitative interviews with patients and clinics to explore if there is a need for technological change of payment processes and what the needs of both stakeholders are.

The following conclusions can be drawn from the study:

1. Patients and medical clinics did not verbalize an urgent need to digitize the payment processes. Their aim is to reduce administrative effort. This can be achieved by implementing digital solutions, also contributing to the goal of providing access to healthcare, improving the patient experience and the medical staff work environment.
2. There is a non-verbalized need for change which could be drawn from how patients and clinics talk about the processes. Both stakeholders perceived that they cannot change anything about the situation anyway. They are unconsciously expressing the need for change but think that it is not possible in the healthcare industry.
3. Healthcare organizations can contribute to remedy pain points by introducing a digital payment process and creating an outstanding customer- and user-experience. To include

stakeholders in the development process they need to provide in-depth options on what would be possible from an innovation point of view.

5.3. Limitations and future work

This thesis is limited in its research design. The sample size of interviews does not allow a representative deduction to the research questions. However, the findings show that in-depth interviews were necessary to come to the conclusion mentioned above. This could not have been provided by a large sample. As shown by the results, respondents needed time to communicate their needs. Although the study clusters the interviewees based on their age, people within those clusters are homogenous. For future research, it might make sense to further categorize the participants (e.g., city vs. countryside, income) to be able to compare different groups. In addition, only one participant is privately insured, and the others are statutorily insured. This causes an imbalance of requirements for payments when they visit a clinic. Privately insured patients are more used to the payment processes than other patients and this might distort the study. For medical clinics, there should be a cluster based on clinic type to enable a comparison and receive more reliable results. Or the study can be focused on one vertical with high out-of-pocket payments only (e.g., dentists). Clinics can also be clustered based on their size and location, as this might be a significant distinction factor and lead to interesting insights.

Comparing check-out processes in medical clinics with those in online shopping requires a deeper analysis of the processes. Most of the healthcare services happen offline, all online retail processes happen online by nature. Still, there is potential to bring those offline processes (and keep the treatment offline) to an online space by introducing applications for the patient and the clinic that enable them to act more independently. Although there are ambitions to introduce telehealth services, this will take a couple of years to be adapted by populace.

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Appendix

I. Interview guideline – pilot

a. Medical clinics

#	Broad Topic	Specific Topic	Author (year)	Theory/Main idea	Q1 - EN	Q1 - DE	Q2 - EN	Q2 - DE	Q3 - EN	Q3 - DE	Q4 - EN	Q4 - DE	Q5 - EN	Q5 - DE
1	General	Current process in patient check-in and check-out	-	-	What type of clinic do you own?	Welche Art von Praxis betreiben Sie?	What are the main challenges you/your clinic currently face?	Welches sind die größten Herausforder-ungen, mit denen Sie/Ihre Praxis derzeit konfrontiert sind/ist?						
2	Payment today	Currrent market restrictions and adoption of new innovations	De Koning et al. (2006) Epp et al. (2000) Utterback (1974) Rogers (1995)	In healthcare, there is a high level of bureaucracy and a low level of digitization which slow down the operational efficiency within the healthcare system, specifically, those of administrative tasks in medical clinics. Communication and action within the organization limit the firm's ability to originate, develop, and implement innovations; The communication channels used to diffuse an innovation may influence the adoption rate.	Could you please describe the current payment process in your clinic. How do your patients currently pay the invoices?	Bitte beschreiben Sie den aktuellen Zahlungsprozess in Ihrer Praxis. Wie bezahlen Patienten aktuell die Rechnungen Ihrer Praxis?	How many private patients or patients that have to pay for out-of-pocket expenses do you have per day on average?	Wie viele Selbstzahler- oder Privatpatienten haben Sie im Durchschnitt pro Tag?	What are the biggest challenges in terms of paying invoices for out-of-pocket medical services for your clinic?	Was sind für Sie die größten Herausforder-ungen bei der Bezahlung von Rechnungen für Selbstzahler-leistungen?	How satisfied are you with your current payment process?	Wie zufrieden sind Sie mit Ihrem derzeitigen Bezahlungs-prozess?	Which role does "factoring" play in your practice? If you use factoring, could you please describe the process? How satisfied are you with the process? How high is the share between factoring and direct payments?	Welche Rolle spielt Factoring für Sie? Wenn Sie Factoring nutzen, beschreiben Sie bitte den Prozess. Wie zufrieden sind Sie damit? Wie hoch ist der Anteil von Factoring und Direktzahlungen?
3	Payment future	Payment preferences	Martins (2020)	Technology (e.g.,artificial intelligence) increases productivity and efficiency and therefore have the potential to transform processes, professionals and patients and establish a digital healthcare system that not only provide better access, convenience, and efficiency, but also decrease the need for healthcare.	Please describe the ideal payment process in your clinic.	Bitte beschreiben Sie den Zahlungsprozess in Ihrer Praxis, wie er für Sie ideal wäre.	Which payment methods would you prefer?	Welche Zahlungs-methoden würden Sie bevorzugen?	What role should factoring play for you? What would increase your satisfaction?	Welche Rolle sollte Factoring für Sie spielen? Was würde ihre Zufriedenheit erhöhen?				

b. Patients

#	Broad Topic	Specific Topic	Author (year)	Theory/main idea	Q1 - EN	Q1 - DE	Q2 - EN	Q2 - DE	Q3 - EN	Q3 - DE
1	General	Current process in patient check-in and check-out	-	-	What is your state of insurance?	Wie sind Sie krankenversichert?	When was the last time you visited a medical clinic?	Wann war das letzte Mal, als Sie eine Arztpraxis aufgesucht haben?	How was the process of the visit?	Wie war der Ablauf des Besuchs?
2	Digitalisation in clinics	Current process challenges and inefficiencies	van Rossum (1997)	Implementation of technology does not directly influence the organizational strucutre	Did the practice use digital tools or applications during your visit that you were confronted with?	Hat die Praxis während Ihres Besuchs digitale Tools oder Anwendungen verwendet, mit denen Sie konfrontiert wurden?	What was the most annoying thing you faced during your clinic visit?	Was war das nervigste, das Sie während Ihres Praxisbesuchs erlebt haben?	Did you ever use telemedicine? If yes, how was the experience and the process?	Haben Sie jemals telemedizinische Leistungen in Anspruch genommen? Wenn ja, wie war die Erfahrung und der Prozess?
3	Payment today	Currrent market restrictions and adoption of new innovations	De Koning et al. (2006) Epp et al. (2000) Utterback (1974) Rogers (1995)	In healthcare, there is a high level of bureaucracy and a low level of digitization which slow down the operational efficiency within the healthcare system, specifically, those of administrative tasks in medical clinics.	Please describe the current payment process of your medical bills (e.g. for a professional teeth cleaning)	Bitte beschreiben Sie den aktuellen Zahlungsprozess Ihrer Arztrechnungen (bspw. für eine professionelle Zahnreinigung)	How often, per year, do you have to pay the treatments yourself?	Wie oft im Jahr müssen Sie die Behandlungen selbst bezahlen?	How satisfied were you with the payment process?	Wie zufrieden waren Sie mit dem Bezahlprozess?
4	Payment future	Payment preferences	Martins (2020)	Technology (e.g.,artificial intelligence) increases productivity and efficiency and therefore have the potential to transform processes, professionals and patients and establish a digital healthcare system that not only provide better access, convenience, and efficiency, but also decrease the need for healthcare.	What is important to you when it comes to the payment of medical bills? What would have saved you time?	Was ist Ihnen in Bezug auf die Bezahlung von medizinischen Leistungen wichtig? Was hätte Ihnen Zeit gespart?	What payment methods would you prefer?	Welche Zahlungsmethoden würden Sie bevorzugen?	Do you perceive the payment of medical bills different than the payment of bills from e.g. online shopping?	Nehmen Sie die Bezahlung von Rechnungen anders wahr als die Bezahlung von Rechnungen aus dem Online Shopping?

II. Interview guideline - final

a. Medical clinics

#	Broad Topic	Specific Topic	Author (year)	Theory/Main idea	Q1 - EN	Q1 - DE	Q2 - EN	Q2 - DE	Q3 - EN	Q3 - DE	Q4 - EN	Q4 - DE	Q5 - EN	Q5 - DE
1	General	Current process in patient check-in and check-out	-	-	What type of clinic do you own?	Welche Art von Praxis betreiben Sie/in welcher Art von Praxis arbeiten Sie?	What are the general main challenges you/your clinic currently face?	Welches sind allgemein die größten Herausforderungen, mit denen Sie/Ihre Praxis derzeit konfrontiert sind?	Which administrative processes cost you a lot of time in your daily work? How high is the administrative effort?	Welche administrativen Prozesse kosten Sie viel Zeit im Arbeitsalltag? Wie hoch ist der administrative Aufwand?				
2	Payment today	Currrent market restrictions and adoption of new innovations	De Koning et al. (2006) Epp et al. (2000) Utterback (1974) Rogers (1995)	In healthcare, there is a high level of bureaucracy and a low level of digitization which slow down the operational efficiency within the healthcare system, specifically, those of administrative tasks in medical clinics. Communication and action within the organization limit the firm's ability to originate, develop, and implement innovations; The communication channels used to diffuse an innovation may influence the adoption rate.	Could you please describe the current payment process in your clinic. How do your patients currently pay the invoices?	Bitte beschreiben Sie den aktuellen Zahlungsprozess in Ihrer Praxis. Wie bezahlen Patienten aktuell die Rechnungen Ihrer Praxis (bspw. Privatpatienten oder Selbstzahlerleistungen)?	How many private patients or patients that have to pay for out-of-pocket expenses do you have per day on average?	Wie viele Selbstzahler- oder Privatpatienten haben Sie im Durchschnitt pro Tag?	What are the biggest challenges in terms of paying invoices for out-of-pocket medical services for your clinic?	Was sind für Sie die größten Herausforderungen bei der Bezahlung dieser Rechnungen?	How satisfied are you with your current payment process?	Wie zufrieden sind Sie mit Ihrem derzeitigen Bezahlungsprozess?	Which role does "factoring" play in your practice? If you use factoring, could you please describe the process? How satisfied are you with the process? How high is the share between factoring and direct payments?	Welche Rolle spielt Factoring für Sie? Wenn Sie Factoring nutzen, beschreiben Sie bitte den Prozess. Wie zufrieden sind Sie damit? Wie hoch ist der Anteil von Factoring und Direktzahlungen?
3	Payment future	Payment preferences	Martins (2020)	Technology (e.g.,artificial intelligence) increases productivity and efficiency and therefore have the potential to transform processes, professionals and patients and establish a digital healthcare system that not only provide better access, convenience, and efficiency, but also decrease the need for healthcare.	Do you get feedback from patients on how satisfied they are with the payment processes? If so, what is the feedback like? Did you ever include patients in the prodcess development?	Erhalten Sie Feedback von den Patienten, wie zufrieden diese mit den Zahlungsprozessen sind? Wenn ja, wie ist das Feedback? Habt ihr schon mal Patienten in die Prozessentwicklung einbezogen?	Please describe the ideal payment process in your clinic.	Wenn Sie etwas an dem Zahlungsprozess verbessern könnten, wie würde dieser dann aussehen?	Which payment methods would you prefer?	Welche Zahlungsmethoden würden Sie bevorzugen?	What role should factoring play for you? What would increase your satisfaction?	Welche Rolle sollte Factoring für Sie spielen? Was würde Ihre Zufriedenheit erhöhen?		

b. Patients

#	Broad Topic	Specific Topic	Author (year)	Theory/main idea	Q1 - EN	Q1 - DE	Q2 - EN	Q2 - DE	Q3 - EN	Q3 - DE	Q4 - EN	Q4 - DE
1	General	Current process in patient check-in and check-out	-	-	What is your state of insurance?	Wie sind Sie krankenversichert?	What type of clinic do you visit how often per year?	Welche Art von Ärzten besuchen Sie wie pro Jahr?	How was the process of the visit?	Wie war der Ablauf des Besuchs?	What are the biggest challenges that you are confronted with when visiting a medical clinic?	Was sind die größten Herausforder-ungen, mit denen Sie beim Besuch einer Arztpraxis konfrontiert sind?
3	Payment today	Currrent market restrictions and adoption of new innovations	De Koning et al. (2006) Epp et al. (2000) Utterback (1974) Rogers (1995)	In healthcare, there is a high level of bureaucracy and a low level of digitization which slow down the operational efficiency within the healthcare system, specifically, those of administrative tasks in medical clinics.	Please describe the current payment process of your medical bills (e.g. for a professional teeth cleaning).	Bitte beschreiben Sie den aktuellen Zahlungsprozess Ihrer Arztrechnungen (bspw. für eine professionelle Zahnreinigung).	How often, per year, do you have to pay the treatments yourself?	Wie oft im Jahr müssen Sie die Behandlungen selbst bezahlen?	What are the biggest challenges that you are confronted with when paying your medical invoices?	Was sind die größten Herausforderungen bei der Bezahlung ihrer Arztbesuches?	How satisfied were you with the payment process?	Wie zufrieden waren Sie mit dem Bezahlprozess?
4	Payment future	Payment preferences	Martins (2020)	Technology (e.g.,artificial intelligence) increases productivity and efficiency and therefore have the potential to transform processes, professionals and patients and establish a digital healthcare system that not only provide better access, convenience, and efficiency, but also decrease the need for healthcare.	Please describe the ideal future payment process for a medical clinic visit if you could improve it.	Bitte beschreiben Sie den idealen zukünftigen Zahlungsprozess bei einem Arztbesuch, wenn Sie diesen verbessern könnten.	Which payment methods would you prefer?	Welche Zahlungsmethoden würden Sie bevorzugen?	What is important to you when it comes to the payment of medical invoices? What would have saved you time?	Was ist Ihnen in Bezug auf die Bezahlung von medizinischen Leistungen wichtig? Was hätte Ihnen Zeit gespart?	Do you perceive the payment of medical bills different than the payment of bills from e.g. online shopping?	Nehmen Sie die Bezahlung von Rechnungen anders wahr als die Bezahlung von Rechnungen aus dem Online Shopping?

III.   Interview results - pilot

a.   Medical clinics

Interview guideline	#1 - DE	#1 - EN
[Interview data]		
Name	2.1	
Date and time	22.11.2022, 10:19 AM	
Place	Phone call	
Duration	16:13	
[Questions]		
General — What type of clinic do you own?	Allgemeinmedizin, 1 Arzt hat einen internistischen Schwerpunkt	General medicine, 1 physician has an internal medicine focus
What are the main challenges you/your clinic currently face?	- Schon vor der Pandemie wahnsinnig Bürokratie, jedes Formular und Verordnung ändert sich - Seit der Pandemie sind die Bestimmungen und besonders die Abrechnung (neue Ziffern, es werden Ziffern gestrichen) aufwändiger geworden - In der Freizeit hängt man an dem KGV Newsletter und kann sich durchlesen, was in der Abrechnung wieder umgestellt wurde (in der Arbeitszeit keine Zeit dazu) - Praxismanagerinnen sind dafür verantwortlich, die Änderungen rauszufinden, muss viel von zuhause machen, weil man das im Praxisalltag nicht schafft - Administrativer Aufwand 40% - Punkte die am meisten Zeit kosten: Rezepte und Verordnungen ausfüllen und vorbereiten - eigentlich müsste mehr Ziel in die Abrechnung investiert werden, aber dafür ist keine Zeit da (eigentlich müsste jeden Abend geprüft werden, ob Patienten richtig abgerechnet wurden)	- Even before the pandemic insane bureaucracy, every form and regulation changes - Since the pandemic, the regulations and especially the billing (new digits, digits are deleted) have become more burdensome - In the spare time one has to read the KGV newsletter and can read through what has been changed again in the accounting (in the working time no time for it) - Practice managers are responsible for finding out the changes, have to do a lot from home, because you can't do it in the daily practice routine - Administrative effort 40% - Tasks that cost the most time: filling and preparing prescriptions and orders - Actually, more time should be invested in billing, but there is no time for that (actually, it should be checked every evening whether patients have been billed correctly)
Payment today — Could you please describe the current payment process in your clinic. How do your patients currently pay the invoices?	- Outgesourced an Private Verrechnungsstelle (PVS) - Keinerlei Bargeld oder Quittungen, auch für das kleinste Attest	- Outgesourced to "Private Verrechnungsstelle (PVS)" [factoring company] - No cash or receipts, even for the smallest certificate
How many private patients or patients that have to pay for out-of-pocket expenses do you have per day on average?	- Ganz wenig, vielleicht einen Patienten - Jeder Arzt hat seine Patienten, wahninnig hoher Altersstamm an Patienten, die wahnsinnig aufwändig sind - Privatversicherte gibt's fast nicht mehr und durch Annahmestop an Patienten kommt da nichts zu - Es wird jeder gleich behandelt, egal ob privat oder nicht - Ärzte machen viele Untersuchungen und sind sehr gründlich, wird viel Zeit für Patienten gebraucht	- Very little, maybe one patient - Every doctor has his patients, an insanely high number of patients, who are insanely complex to treat - Privately insured patients are almost non-existent, and due to a stop in accepting patients, there will not be more in the future - Everyone is treated the same, whether private or not - Doctors do a lot of examinations and are very thorough, a lot of time is needed for patients
What are the biggest challenges in terms of paying invoices for out-of-pocket medical services for your clinic?	- Haben sie nichts mit zu tun, macht alles über die PVS - PVS schreibt Praxis an, wenn auch nach Mahnung nicht gezahlt wurde und fragen, was dann gemacht werden soll	- They have nothing to do with it, everything is done via the PVS - PVS contacts practice if payment is not made even after reminder/dunning and asks what should be done then
How satisfied are you with your current payment process?	- Gut zufrieden - Rufen auch mal an und fragen, ob man nicht da und da noch was abrechnen kann	- Well satisfied - Call also sometimes and ask if there is more to bill
Which role does "factoring" play in your practice? If you use factoring, could you please describe the process? How satisfied are you with the process? How high is the share between factoring and direct payments?	- [not relevant, as answered above]	- [not relevant, as answered above]

Interview guideline		#1 - DE	#1 - EN
[Interview data]			
Name		2.1	
Date and time		22.11.2022, 10:19 AM	
Place		Phone call	
Duration		16:13	
[Questions]			
Payment future	Please describe the ideal payment process in your clinic.	- Man kann ganz viele Einzelleistungen vergüten - Wüsste nicht, was verbessert werden soll - Manchmal ein bisschen aufwändig, wenn Faktor vergütet werden muss oder Krankenkassen unterschiedlich zahlen - Feedback von den Patienten: Passiert nicht bei den Privatpatienten, weil die sind es über Jahre gewöhnt; betrifft eher die Kassenpatienten, die wollen direkt vor Ort bezahlen und sehen nicht ein, warum die eine Rechnung erhalten (am liebsten Barzahlung) - Arzt in der Praxis möchte kein Bargeld	- You can pay for a lot of individual services - I do not know what should be improved - Sometimes a bit laborious when factor has to be reimbursed or health insurance companies pay differently - Feedback from patients: Doesn't happen with private patients, because they are used to it for years; concerns rather the health insurance patients, who want to pay directly on the spot and don't see why they get an invoice (preferably cash payment) - Doctor in the practice does not want cash
	Which payment methods would you prefer?	- [not relevant, as they bill via PVS]	- [not relevant, as they bill via PVS]
	Is there anything else that would increase your satisfaction or facilitate the work related to billing?	- Dass sich nicht ständig alle Ziffern ändern, dass bei einem System bleiben kann - System gibt es schon seit 18 Jahren - Ziffern sind fünfstellig, irgendwann hat man einige im Kopf, aber als die noch einstellig waren war es einfacher sich die zu merken - Zu komplex	- That not constantly change all the digits that can stay with one system. - System has been around for 18 years - Numbers are five-digit, at some point you have some in your head, but when they were still single-digit it was easier to remember them - Too complex
	What role should factoring play for you? What would increase your satisfaction?	- [not relevant, as they bill via PVS]	- [not relevant, as they bill via PVS]
	Do you have any other thoughts on the topic we just talked about?	- Man muss daten immer manuell raussuchen, um sie hinter die Ziffer zu schreiben, zusätzliche Bürokratie - Viele Kleinigkeiten, die dazu kommen und man kann nicht mehr an alles denken, vor allem wenn sich jede Woche was ändert	- You always have to look up data manually to write it behind the number, additional bureaucracy - Many little things that come up and you can't think of everything, especially if something changes every week
	How much time do you spend on billing?	- 3 - 4 Stunden in der Woche mit einer Kollegin zusammen, müsste aber wesentlich effektiver sein - Aktuell bei Oktober, aber November/Dezember schafft sie nicht - Viele Fehler in der Abrechnung, eigentlich müsste man die komplette Tagesliste jeden Tag nachgucken, muss aber jemand permanent machen, damit man die Fehler sieht und die Ziffern im Kopf hat (braucht zu lange und man übersieht ganz viel) - Gibt verschiedene Systeme (Medistar war super, weil man Ziffern in Farbe hinterlegen konnte, jetzt bei Medical Office ist alles schwarz); man muss den Blick haben um die Fehler rauszufiltern - Fehler in der Abrechnung meistens zum Nachteil für die Praxis, sind da echt nicht so gut drin - Über 800 EUR nicht abgerechnet Anfang des Quartals, da geht wahnsinnig viel Geld durch die Lappen	- 3 - 4 hours a week together with a colleague, but should be much more effective - Currently for checks at October, but November/December she does not manage - Many errors in billing, actually one should check the complete daily list every day, but someone has to do it permanently, so that one sees the errors and has the numbers in mind (takes too long and one overlooks a lot) - There are different systems (Medistar was great because you could store digits in color, now with Medical Office everything is black); you have to have an eye to filter out the errors - Errors in billing are usually to the detriment of the practice, we are really not that good at it - More than 800 EUR not billed at the beginning of the quarter, there is a lot of money going through the cracks

b. Patients

Interview guideline	#1 - DE	#1 - EN	#2 - DE	#2 - EN	#3 - DE	#3 - EN	#4 - DE	#4 - EN
[Interview data]								
Name	1.1		1.2		1.3		1.4	
Date and time	10.11.2022, 14:00		12.11.2022, 11:22		12.11.2022, 11:59		11.11.2022, 13:57	
Place	Google Meet		Google Meet		in person		in person	
Duration	9:52 min		14:06		16:24		11:14	
[Questions]								
How old are you?	24		24		54		65	
What is your state of insurance?	Gesetzlich	Statutory	Gesetzlich, studentisch	Statutory, as a student	Gesetzlich	Statutory	Privat	Private
When was the last time you visited a medical clinic?	Vor zwei Wochen Zahnarzt, war vorher schon mal da und ging schnell	Dentist two weeks ago, was there before and went quickly	Vor zwei Wochen beim Hautarzt für Hautkrebsscreening	Two weeks ago at the dermatologist for skin cancer screening	Letztes Mal im Mai eine Arztpraxis besucht, Gynäkologe	Last time visited a doctor's office in May, gynaecologist	Vor einer Woche Allgemeinmediziner	General practitioner a week ago
General — How was the process of the visit?	- Termin über Doctolib gebucht und innerhalb von einer Woche war Termin frei - vor Ort Versichertenkarte - danach Termin für Zahnreinigung abgemacht	- Scheduled appointment via Doctolib and got one within one week - had to present insurance card in the clinic - after treatment: scheduled new appointment for professional theeth cleaning	- Vorher noch nicht in der Praxis, Praxis über Google gefunden (basierend auf Bewertungen Websites angeschaut), jemanden ausgewählt den sie symphatisch fand, Termin telefonisch vereinbart - Anamnese auf Papier	- Found clinic on Google, based on reviews - Chose clinic that was sympathic - Scheduled appointment via phone - Anamnesis on paper	Telefonische Terminvereinbarung ca. 7 Monate vorher; Karte einlesen, Wartezeit, Untersuchung, neuen Termin für nächstes Jahr mitgenommen	- Scheduled appointment via phone 7 months before	- Termin einen Tag vorher telefonisch gebucht - Anmeldung an der Rezeption (ca. 5 min), Wartezimmer (keine 10 Minuten) - Keine Dokumente ausgefüllt, muss generell nicht gemacht werden nur bei Eingriffen - Anmeldung war per Computer, aber nicht direkt mit was digitalem konfrontiert	- Scheduled appointment one day before - Waiting for 5 minutes for checkin - Did not have to fill in any documents - Clinic did not use any digital tools that patients are confronted with
Digitalisation in clinics — How long did the process take?	Ging alles innerhalb von 5 Minuten	Very fast	Daten ausfüllen ca. 5 Mins, der gesamte Prozess ca. 10 mins, dann Wartezeit	- Fill in the data: about 5 minutes - Waiting time: 10 minutes	So wie immer gelaufen	Same process as always	- Anmeldung ist das nervigste, weil Datenschutz wird nicht eingehalten - Man muss die persönlichen Daten und was man so hat vor allen Leuten sagen	- Check-in is the most annoying, as there is no data privacy - Patients have to tell their private data (name, why they are there/what kind of treatment they need) in front of all other patients who are waiting
Did the practice use digital tools or applications during your visit that you were confronted with?	Doctolib	Doctolib as an appointment booking tool	Nein	No	- Ein paar Tage später wird Rechnung rausgeschickt - Überweisen per online banking	- Received physical invoice a few days later - Payment via online banking	- Auf die Rechnung warten, weil sie von der Verrechnungsstelle kommt (immer zum Quartalsende) - Überweisung per Online Banking	- Waiting for the invoice (via billing company) at quartals end - Payment via online banking

Interview guideline		#1 - DE	#1 - EN	#2 - DE	#2 - EN	#3 - DE	#3 - EN	#4 - DE	#4 - EN
[Interview data]									
Name		1.1		1.2		1.3		1.4	
Date and time		10.11.2022, 14:00		12.11.2022, 11:22		12.11.2022, 11:59		11.11.2022, 13:57	
Place		Google Meet		Google Meet		in person		in person	
Duration		9:52 min		14:06		16:24		11:14	
[Questions]									
Digitalisation in clinics	What was the most annoying thing you faced during your clinic visit?	Per hand Anamnese ausfüllen, wäre schön gewesen wenn man das vorher hätte online machen können	Fill out anamnesis on paper, would have been nice if you could have done this online beforehand	Keine Online-Terminreservierung, Anamnese ausfüllen (könnte man auf Ipad machen oder speichern)	- No option to schedule appointment online - Fill in anamnesis on paper	-	-	- Rechnung muss bezahlt werden und wird dann zurückerstattet von der Krankenversicherung (4 Wochen ca.)	- Invoice needs to be paid and will then be reimbursed by the insurance (time period of 4 weeks)
	Did you ever use telemedicine? If yes, how was the experience and the process?	-	-	Nein	No	Nein	No	Nein	No
Payment today	How often, per year, do you have to pay the treatments yourself?	- Selten, Versuch Arzt zu vermeiden, aber jetzt professionelle Zahnreinigung 1x im Jahr - Vermeiden weil sie nicht gerne anrufen und Termin ausmachen möchte	- Rarely, try to avoid doctor, but now professional teeth cleaning 1x a year - Avoid because she does not like to call clinics to schedule appointnt	1 mal pro Jahr (nur Zahnreinigung)	Once per year dentist (professional teeth cleaning)	- Heilpraktikerin - Augenarzt	- Alternative practicioner a few times per year - Ophthalmologist	Immer	Everytime
	Please describe the current payment process of your medical bills (e.g. for a professional teeth cleaning).	Erinnert nicht mehr, ist sich aber sicher, dass es in bar oder ec karte vor ort sein wird	Does not remember but is sure that it will be in cash or EC-card on site	- Rechnung per Post bekommen (nach 1 Woche ca) von Abrechnungs-gesellschaft (konnte sie erst nicht richtig zuordnen, hat sich gewundert wirkte aber seriös, wurde vorher nicht kommuniziert) - Per online banking überwiesen	- Received physical invoice via mail from billing company which she couldn't initially assign to the treatment as the clinic did not communicate this - Payment via online banking	Rechnung	Physical invoice	- 4 Wochen Zeit und innerhalb dieser Zeit kann das Geld auf dem Konto sein -> Arztkosten schon rein-holen bevor man überweist - Bei Medikamenten muss man in Vorleistung gehen	- Get the reimbursement before you have to pay the invoice - You have to pay in advance for medicines
	How satisfied were you with the payment process?	Digital direkt sehen, wofür man eigentlich bezahlt	Would like to directly see what you have to pay for	Prozess war gut, fand sie nicht schlimm, aber hätte es einfacher gefunden direkt vor Ort zu bezahlen oder direkt von der Krankenkasse; insgesamt langer Prozess; dann hätte man es direkt mit dem Besuch erledigt	- Process was good - Would prefer to pay directly in the clinic after the treatment and complete process directly with the clinic visit - Process in total rather long	Funktioniert	It works	- Auf Rechnung ewig warten ist kein Nachteil, weil Konto wird geschont - Muss nicht kontrolliert oder gegengezeichnet werden, wird einfach überwiesen	- Waiting for the invoice is no disadvantage as bank account is preserved - Does not have to be controlled or signed, will just be transferred

Interview guideline		#1 - DE	#1 - EN	#2 - DE	#2 - EN	#3 - DE	#3 - EN	#4 - DE	#4 - EN
[Interview data]									
Name		1.1		1.2		1.3		1.4	
Date and time		10.11.2022, 14:00		12.11.2022, 11:22		12.11.2022, 11:59		11.11.2022, 13:57	
Place		Google Meet		Google Meet		in person		in person	
Duration		9:52 min		14:06		16:24		11:14	
[Questions]									
Payment future	What is important to you when it comes to the payment of medical bills? What would have saved you time?	-	-	Direkt vor Ort in der Praxis bezahlen	Direct payments in the clinic	EC Karte	Payment via debit card	- Einfacher per Online Banking überweisen, weil Zwischenschritt über Kreditkarte nicht nötig und man hat Beleg, dass man überwiesen hat - Belege nicht per Post einreichen bei privater Versicherung und Beihilfe	- Easier via online banking, as no additional step via credit card is necessary and you have the proof that you paid the invoice - Submit physical documents to insurance
	What payment methods would you prefer?	- Handy (Apple pay), weil Handy immer dabei - Man muss nichts mehr machen - Direkt bezahlen aber nur für kleinere Beträge, bei größeren wäre Ratenzahlung besser - Tierarzt immer bar bezahlen - Grenze liegt bei 500 EUR	- Payments via phone (e.g., Apple pay) directly in the clinic for amounts lower than 500 EUR - Above 500 EUR payment in installments	- Paypal bei Online shopping weil am einfachsten und man muss keine Kreditkartendaten eingeben, vor Ort immer Kreditkarte oder Debitkarte - Medizinische Leistungen auch per Paypal bezahlen	- Payal for online shopping - On site always credit card, but would be open to pay medical services also via PayPal	Rechnung/Direktzahlung, weil man dann erst bezahlt wenn man die Leistung erhalten hat	Invoice/direct payment, because you only pay after you received the service	Kreditkarte, weil einfacher ist und Kosten nicht sofort abgebucht werden, sondern zu einem bestimmten Termin	Credit card as it is easier and amount is not directly deducted from the bank account
	Do you perceive the payment of medical bills different than the payment of bills from e.g. online shopping?	- Beim Arzt denkt man viel mehr drüber nach, wofür man Geld ausgibt - Beim online shopping sieht man kein bargeld o.Ä., man hinterfragt bei medizinischen Leistungen die Notwendigkeit mehr - Man muss nirgendwo hingehen	- Necessity of medical services is questioned more - Have to go to a physical clinic for medical services, for online shopping not	Bei Gesundheitsbezahlungen ein bisschen sensibler was Daten angeht, bei Online shopping ein bisschen entspanner was Bezahlungsmöglichkeiten angeht, im Zweifel nicht so sensible daten wie Gesundheitsdaten die Misverwendet werden könnten	- A bit more sensitive for medical data - For online shopping data is not that sensitive	Medizinische Leistung erfordert auch offline prozess, Ferndiagnose ist fragwürdig; Leistung muss erstmal erbracht werden, bevor sie bezahlt wird; Gesundheit ist wichtiger, aber Aufklärung ist wichtiger, gerade bei IGEL Leistungen, Wichtigkeit der IGEL Leistungen muss man selbst beurteilen, man kann die Notwendigkeit als Patient nicht beurteilen	- Medical service requires offline process, telemedicine is questionable - Service has to be done before paying for it - Health is more important than online shopping, but reconnaissance is even more important, especially for out-of-pocket expenses ("IGeL") - Patients have to assess the importance of out-of-pocket expenses for themselves, although they cannot evaluate their necessity	Kein Unterschied, online bestellungen werden auch per Kreditkarte bezahlt	No difference, everything is paid by credit card

IV. Interview results – final

a. Medical clinics

Interview guideline	#2 - DE	#2 - EN	#3 - DE	#3 - EN
[Interview data]				
Name	2.2		2.3	
Date and time	29.11.2022, 10:17 AM		30.11.2022, 7:57 AM	
Place	Phone call		Phone Call	
Duration	17:14		Physician	
[Questions]				
What type of clinic do you own/work at?	Zahnarzt	Dental clinic	Zahnarztpraxis	Dental clinic
What are the main challenges you/your clinic currently face?	- Planerstellung für Zahnersatz - Rechnungsstellung - Verständlich dem Patienten rüber zu bringen, weil es ist schwierig, weil alles mit Gebühren zusammengemacht wird und damit können die nicht so viel anfangen - Patienten rufen sehr oft an und fragen, was das bedeutet und möchten das erklärt haben - Wäre schön, wenn es für den Patienten verständlicher dargestellt wird, aber leider muss sich die Praxis an Vorgaben halten; man darf keine eigenen Texte einfügen. Es ist alles vorgegeben, wie die Rechnung gestellt werden muss	- Plan preparation for dental prosthesis - Invoicing - To make it understandable to the patient, because it is difficult, as everything is done with fees and they can't do much with it - Patients often call and ask what it means and ask for explanation/clarification - It would be nice if it was presented in a more understandable way for the patient, but unfortunately the clinic has to stick to guidelines; you are not allowed to insert your own texts. Everything is predefined, how the invoice has to be set up	- Wirtschaftliche Situation der Patienten (steigende Energiepreise, Inflation), die Leute möchten auch vernünftigen Zahnersatz ahben, aber von den Krankenkassen wird nur das Minimum zur Verfügung gestellt - 90 % der Patienten zahlen selbst dazu	- Economic situation of the patients (rising energy prices, inflation), people also want to have reasonable dentures, but the health insurance companies only provide the minimum - 90 % of the patients have to pay out-of-pocket expenses
Which administrative processes cost you a lot of time in your daily work? How high is the administrative effort? (General)	- Ich sitze von morgens 8 bis abends um 7 und erstelle die Planung und rechne das dann auch ab, sehr großer Aufwand für eine Vollzeitkraft - 40h die Woche dabei, die Rechnungen zu erstellen (für 2 Praxen) - Planung: Heil- und Kostenpläne, die Kostenvoranschläge für die Patienten, dass die sich überlegen, dass die das überhaupt machen lassen, damit hinterher die Rechnung gestellt werden kann; ist wie ein Kreislauf - Größe der beiden Praxen: 4 Behandler - Hinterher die Zahlungseingänge verwalten, aber größtenteils ausgegliedert - Rechnung wird fertiggestellt und dann wird das extern an Abrechnungsgesellschaft gegeben, die die Rechnungen drucken und den ganzen Zahlungsverkehr mit den Patienten abwickeln, sodass mit dem Mahnwesen nicht mehr so viel zu tun ist - Vereinzelt Patienten, die noch normal bezahlen - Zu 80% soll es so sein, dass die Rechnungen rausgehen - Die Zahlungsmoral aufgrund der Gesamtwirtschaftlichen Situation ist gesunken, wird noch spannender ab nächstem Jahr, wie sich das weiterentwickelt - Bedenken, wo Leute Prioritäten setzen (in der Zahnreinigung und im Zahnersatz oder warme Wohnung und Essen?); sehen das als Luxus an - Patienten nehmen die medizinischen Leistungen schon sehr ernst, man ist erstaunt wofür Patienten bereit sind wie viel Geld auszugeben, schon sehr hoher Standard bei denen; Momentan legen sie noch sehr großen Wert auf die Ästhetik	- I sit from 8 in the morning until 7 in the evening and create the planning and then also bill this, very large effort for a full-time employee - 40 hours a week creating invoices (for 2 practices) - Planning: treatment and cost plans, the cost estimates for the patients, so that they consider having the treatment done at all, so that the invoice can be issued afterwards; it's like a cycle - Size of the two practices: 4 practitioners - Manage incoming payments afterwards, but for the most part outsourced to factoring company - Invoice is completed and then given to an external factoring company, which prints the invoices and handles all the payment transactions with the patients, so that the clinic has nothing to do with the dunning process - A few patients who still pay normally - 80% of the invoices are supposed to be outsourced - The payment morale has dropped due to the overall economic situation; it will be even more exciting to see how this develops next year - Concerns about where people put their priorities (in dental cleaning and dentures or warm home and food?); people see this as a luxury - Patients already take medical services very seriously, one is amazed at what patients are willing to spend how much money on, already very high standard for them; at the moment they still attach great importance to aesthetics	- Korrespondenz mit Krankenkassen - 1 Stunde pro Tag um zu gucken was haben wir für Pläne geschrieben, was gabs da von den Sachbearbeitern dran zu meckern, was muss man umschreiben, was muss man an Stellungnahmen für Gutachter schreiben	- Correspondence with health insurance companies - 1 hour per day to check what plans we have written, what the administrators had to complain about, what has to be rewritten, what statements have to be written for the surveyors

Interview guideline	#2 - DE	#2 - EN	#3 - DE	#3 - EN
[Interview data]				
Name	2.2		2.3	
Date and time	29.11.2022, 10:17 AM		30.11.2022, 7:57 AM	
Place	Phone call		Phone Call	
Duration	17:14		Physician	
[Questions]				
Payment today — Could you please describe the current payment process in your clinic. How do your patients currently pay the invoices?	- Rechnung wird an Abrechnungsgesellschaft übermittelt, die schreiben die Rechnung - Abrechnungsgesellschaft zahlt Geld an Praxis und regelt alles weitere - Patient überweist an Abrechnungsgesellschaft - Abrechnungsgesellschaft übernimmt Mahnwesen - Auch Möglichkeit der EC-Kartenzahlung oder Barzahlung in der Praxis, bei kleineren Beträgen (z.B. Zahnreinigung oder Füllung); hauptsächlich mit EC-Karte - Angenehm für Praxis, weil dann ist Vorgang abgeschlossen und man braucht sich nicht weiter drum zu kümmern	- Invoice is sent to the factoring company, which issues the invoice - Factoring company pays money to practice and takes care of everything else - Patient transfers money to factoring company - The factoring company takes over the dunning process - Also possibility of EC-card payment or cash payment in the practice, for smaller amounts (e.g. dental cleaning or filling); mainly with EC-card - Pleasant for the practice, because then the process is completed and you don't have to worry about it any more	- EC-Karte, Kreditkarte, ApplePay etc. direkt in der Praxis oder Rechnung wird über Factoring Unternehmen rausgeschickt (digitaler Prozess) - In ganz seltenen Fällen wird die Rechnung mitgegeben und dann überweisen die die Patienten	- EC card, credit card, ApplePay etc. directly in the practice or the invoice is sent out via a factoring company (digital process) - In very rare cases, the invoice is handed out to the patient directly and then the patients transfer the money
How many private patients or patients that have to pay for out-of-pocket expenses do you have per day on average?	- 25 Patienten, die direkt bezahlen (ca. 50%) - Patienten sagen dann "dann ist weg, dann hab ich's aus dem Kopf" - Große Summen sind ausnahmen, dass da per EC-Karte bezahlt wird (Beträge bis 150 EUR werden oft direkt bezahlt)	- 25 patients who pay directly (approx. 50%) - Patients then say "then it's gone, then I've got it out of my head" - Large sums are exceptions to be paid by EC card (amounts up to 150 EUR are often paid directly)	- 10 % richtige Privatpatienten - 90 % Selbstzahler	- 10 % private patients - 90 % patients with out-of-pocket payments
What are the biggest challenges in terms of paying invoices for out-of-pocket medical services for your clinic?	- keine Herausforderungen	- no challenges	- Patienten werden vorher bonitätsgeprüft vom Rechenzentrum und Praxis erhält eine Rückmeldung, ob Rechnung angekauft wird oder nicht. Dadurch hat man eine große Sicherheit, wenn die Patienten angekauft werden, aber wenn sie nicht angekauft werden, muss geguckt werden, wie man die Zahlungsmodalitäten erledigt. - Bestimmt zahlt jeder 3. seine Rechnung nicht. - Wird alles im Vorfeld vor der Behandlung besprochen	- Patients are credit-checked beforehand by the factoring company and the practice receives feedback as to whether the invoice is purchased or not. This gives you great security if the patients are bought, but if they are not bought, you have to look at how to handle the payment modalities. - Approx. every third person does not pay the invoice - Everything is discussed in advance before the treatment
How satisfied are you with your current payment process?	- So wie es jetzt läuft sehr zufrieden, weil Zusammenarbeit mit Abrechnungsgesellschaft, sonst wäre sie nicht so zufrieden	- Very satisfied with the current process, because cooperation with settlement company, otherwise not so satisfied	- Sehr zufrieden, weil wenn es über das Factoring läuft, muss man sich keine Sorgen macht, weil man 2 Tage später das Geld auf dem Konto hat und hat damit nichts mehr zu tun. Wenn der Patient nicht zahlt ist das das Problem vom Factoring Unternehmen. - Wenn der Patient direkt vor Ort zahlt, mit Sumup, hat man auch am nächsten Tag das Geld auf dem Konto. - Alles sehr automatisiert und einfach, geht nur um die Patienten, die durchs Raster fallen	- Very satisfied because when it goes through factoring you do not have to worry because 2 days later you have the money in your account and you have nothing to do with it. If the patient doesn't pay, that's the problem of the factoring company. - If the patient pays directly on the spot, with Sumup, you also have the money in your account the next day - Everything is very automated and simple, it's just about the patients who fall through the cracks.

Interview guideline	#2 - DE	#2 - EN	#3 - DE	#3 - EN
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Place	Phone call		Phone Call	
Duration	17:14		Physician	
[Questions]				
Payment today — Which role does "factoring" play in your practice? If you use factoring, could you please describe the process? How satisfied are you with the process? How high is the share between factoring and direct payments?	- Spielt eine sehr große Rolle - Mittlerweile im medizinischen Bereich Standard - Rechnungen werden noch per Papier rausgeschickt - Patienten wollen Rechnungskopie per Mail; ungerne aufgrund des Datenschutzes - Röntgenaufnahmen und Arztbrief dürfen rechtlich nicht unverschlüsselt verschickt werden; Telematik - Bei Rechnungen würde es theoretisch aber gehen - In anderen Bereichen bekommt man die Rechnungen so per Mail - Patienten geben sich dann so damit zufrieden	- Plays a very large role - Now standard in the medical sector - Invoices are still sent out on paper - Patients want a copy of the invoice by e-mail; clinic is reluctant because of data protection - X-rays and doctor's letters cannot legally be sent unencrypted; telematics - But it would theoretically work for invoices - In other areas, invoices are sent by e-mail - Patients are then satisfied with this	- 95% der Rechnungen übers Factoring	- 95% of invoices via factoring
Do you get feedback from patients on how satisfied they are with the payment processes? If so, what is the feedback like?	- Nein, läuft super, melden sich wenn nur, wenn Beschwerden da sind - Abrechnungsgesellschaft ist super nett und sehr kompetent - Bei Privatversicherungen übernehmen Versicherungen teilweise etwas nicht und Abrechnungsgesellschaft schreibt Begründungen, damit die das, was die nicht erstattet bekommen eben auch erstattet bekommen	- No, it's going great, they only get in touch if there are complaints - The billing company is super nice and very competent - With private insurances, insurance companies sometimes don't cover something and the billing company writes reasons so that they get reimbursed for what they don't get reimbursed for	- Factoring Unternehmen ist sehr schnell, Patient hat meistens den Tag danach schon die Rechnung, das wird dann manchmal so ein bisschen befremdlich aufgenommen ("einen Tag drin und schon hab ich die Rechnung"), aber es ist einfach nur effizient was das Rechenzentrum macht - Und wenn die Patienten ihren Zahlungsaufforderungen nicht nachkommen, die haben eine Zahlungsfrist von 4 Wochen, dann sind die vom Rechenzentrum auch sehr schnell mit mahnungen, weil das ist ja auch automatisiert. Da guckt ja nicht jemand selber nach und fragt, sondern da gibts nach vier Wochen die Mahnung und im Zweifelsfall wird das vom Rechenzentrum eingeklagt - "Mit Ihnen kann man ja gar nicht mehr reden", ja gut aber wenn man nach vier Wochen die Rechnung nicht bezahlt hat - Patienten rufen dann in der Praxis an und beschweren sich darüber, dass das Factoring Unternehmen sich das Geld einklagt - Praxis übernimmtelt Daten digital an Factoring Unternehmen und die Patienten kriegen das in Schriftform per Brief mit der Post	- Factoring companies are very fast, patients usually receive their invoices the next day, which is sometimes perceived a little strangely ("one day in and I've already got the invoice"), but the factoring company simply works efficiently - And if the patients do not meet their payment requests, they have a payment deadline of 4 weeks, then the computer centre is also very fast with reminders, because that is also automated. No one checks on their own and asks, but after four weeks they send a reminder and in case of doubt the factoring company takes legal action and starts the dunning process - Patients react with "We can't talk to you any more", that's fine, but if you haven't paid the bill after four weeks, patients call the practice and ask for help - Patients then call the practice and complain that the factoring company is suing for the money - The practice transfers data digitally to the factoring company and the patients receive this in writing by physical mail

Interview guideline		#2 - DE	#2 - EN	#3 - DE	#3 - EN
[Interview data]					
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Date and time		29.11.2022, 10:17 AM		30.11.2022, 7:57 AM	
Place		Phone call		Phone Call	
Duration		17:14		Physician	
[Questions]					
Payment future	Please describe the ideal payment process in your clinic.	- Läuft super - Routine die man hat, geht schnell von der Hand - Wenn man das tagtäglich macht, ist alles gut - Neuerungen sind dann schon wieder schwieriger, aber hat mit der Zahlung an sich erstmal nichts zu tun	- Works well - The routine works well and fast - If you do it every day, everything is good - Novelties are more difficult, but have nothing to do with the payment itself	- Mandantenportal übersichtlicher gestalten um eine genauere Kontrolle darüber zu haben, welche Rechnungen schon zugestellt sind oder es gibt ja auch manche Rechnungen, die nicht direkt übermittelt werden, weil sie nochmal intern geprüft werden, gerade bei größeren Summen, da dauert es dann manchmal bis man dann das Feedback bekommt. Und dann wundert man sich, warum das Geld vom Factoring Unternehmen noch nicht da ist bis man herausfindet dass da ne Rückfrage zu der Rechnung ist. Da werden Kleinigkeiten überprüft, ob alle Daten stimmen, ob eine Leistung einmal zu viel oder einmal zu wenig abgerechnet wurde. Also das Mandantenportal ist unübersichtlich - Leute die in der Praxis bezahlen zahlen meistens Zahnreinigungen und Füllungen (100 - 200 EUR) und alles darüber wird über Factoring Unternehmen gemacht	- The client portal should be better structured so that you have more precise control over which invoices have already been sent, or there are also some invoices that are not sent directly because they are checked again internally, especially for larger sums, and it sometimes takes until you get the feedback. And then you wonder why the money from the factoring company hasn't arrived yet until you find out that there is a query about the invoice. Little things are checked, whether all the data is correct, whether a service was billed once too much or once too little. The client portal is confusing - People who pay in the practice mostly pay for dental cleanings and fillings (100 - 200 EUR) and everything above that is done via factoring companies
	Which payment methods would you prefer?	- EC-Kartenzahlung oder Barzahlung - Fragen Patienten im Vorfeld ob nach der Bezahlung sofort bezahlt werden soll oder ob Rechnung zugeschickt werden soll	- EC card payment or cash payment - Ask patients in advance whether payment is to be made immediately or whether an invoice is to be sent	- EC Karte das liebste, weil da am wenigsten Gebühren anfallen	- Prefers EC card, because it has the lowest fees
	What role should factoring play for you? What would increase your satisfaction?	- Wird so bleiben	- Will stay the same		

Interview guideline		#4 - DE	#4 - EN	#5 - DE	#5 - EN
[Interview data]					
Name		2.4		2.5	
Date and time		01.12.2022, 12:35 AM		02.12.2022, 9:47 AM	
Place		Phone Call		Phone Call	
Duration		18:36		16:30	
[Questions]					
General	What type of clinic do you own/work at?	Zahnarzt	Dental clinic	Heilpraktiker und Osteopatie (4 Behandler)	Naturopath and osteopathy (4 practitioners)
	What are the main challenges you/your clinic currently face?	- Es kostet unglaublich viel Zeit, die Abrechnung und Dokumentation so zu gestalten, dass es sich lohnt und korrekt ist. Nach einem sehr langen Tag beansprucht das unglaublich viel Zeit, die noch oben drauf kommt. - Erfahrene Kollegen sind deutlich schneller und fitter. Wenn man abends um 7 Uhr aufhört zu behandeln, dann geht die Dokumentation los. Das beinhaltet die Abrechnung (was wurde gemacht), sitzt man locker nochmal 2 Stunden dran. Dann wird das nochmal überprüft, dann ist noch kein Heil- und Kostenplan geschrieben oder auch noch nichts abgerechnet oder nicht fertig gemacht als Rechnung, sodass es wirklich an den Patienten gestellt werden kann. Das wäre wirklich das reine Eintragen der Kostenpositionen. Und bis alles so fertig ist, dass es über die Krankenkasse abgerechnet werden kann oder der Patient über das Rechenzentrum eine Rechnung erhält kommt nochmal eine ganze Ecke Arbeit drauf. - Wenn wir das alles selbst machen würden, kann man nochmal so 3 - 4 Stunden verbringen pro Tag (wenn man alles korrekt machen will).	- It takes an incredible amount of time to correctly perform the accounting and documentation and that it is worthwhile. After a very long day, it takes an incredible amount of time on top of that. - Experienced colleagues are much faster and fitter. When you stop treating patients at 7 PM, the documentation starts. That includes the accounting (what was done), you can easily spend another 2 hours. Then it is checked again, by that time no treatment and cost plan has been written or nothing has been billed or no invoice issued so that it couldd be sent to the patient. That would be just entering the cost items. And until everything is ready so that it can be invoiced via the health insurance company or the patient receives an invoice from the factoring company, there is a lot more work to do. - If we were to do it all ourselves, we could spend another 3 - 4 hours a day (if we want to do everything correctly).	- Momentan das Angebot so anzupassen, dass es in die aktuelle Zeit passt. Nach Corona und in die Energiekrise reinrutschend, mit den Menschen die ein bisschen weniger Geld zur Verfügung haben und gerade die Selbstzahler sich öfter überlegen, welches Geld sie für was ausgeben. Da kommt dann doch die Behandlung hier, die für manche ein Luxus ist und nicht unbedingt lebensnotwendig, fallen da bei manchen ein bisschen hintenrunter. Das hat seit Corona angefangen, dass ein bisschen weniger los ist und wir sind am überlegen wie man es anpassen kann, dass es für die Patienten trotzdem passt. Zb machen wir viele Online Gespräche, wir versuchen Paketpreise zu schnüren, damit die Patienten trotzdem kommen können und nicht nur so vereinzelt. Momentan, aber eigentlich schon so seit 2 Jahren das schwierigste hier.	- At the moment, we are adapting our offer [of treatments] to fit the current time (Corona, energy crisis). People have a little less money available and especially the self-payers are paying more attention to they spend money on. So the treatment here, which for some is a luxury and not necessarily vital, falls a bit behind. This has started since Corona that our clinic is a little less busy and we are thinking about how we can adapt to it so that it still suits the patients. For example, we do a lot of online consultations, we try to develop package prices so that patients can still come and not just one at a time. That is at the moment, but actually for the last 2 years the most difficult thing here.
	Which administrative processes cost you a lot of time in your daily work? How high is the administrative effort?	- Arztbriefe - In Kontakt mit Patienten oder Krankenkassen in Kontakt treten, weil man muss teilweise auch Begründungen schreiben, weil die Kassen an vielen Punkten nachhaken und sagen ne diesen Punkt übernehmen sie nicht. Das kann auch nur bis zu einem gewissen Punkt eine externe Abrechnungskraft übernehmen und dann müssen wir da wieder einspringen - Zeitlich schwierig einzuschätzen, ca. 5 Stunden pro Woche	- Doctor's letters - Get in touch with patients or health insurances, because you sometimes have to write justifications, because the health insurance needs clarification or say they will not reimburse treatments. This can only be done up to a certain point by an external accountant and then we have to step in again. - It is difficult to estimate the time, about 5 hours per week.	- Buchhaltung kostet relativ viel Zeit, ansonsten kann ich es ehrlich gesagt nicht so sagen. Richtig viel Zeit ist so ein bisschen relativ	- Bookkeeping costs a relatively large amount of time, otherwise I honestly cannot say anything.

Interview guideline	#4 - DE	#4 - EN	#5 - DE	#5 - EN
[Interview data]				
Name	2.4		2.5	
Date and time	01.12.2022, 12:35 AM		02.12.2022, 9:47 AM	
Place	Phone Call		Phone Call	
Duration	18:36		16:30	
[Questions]				
Payment today — Could you please describe the current payment process in your clinic. How do your patients currently pay the invoices?	- Die Patienten kriegen alles, was sie selbst zahlen müssen oder bei der Zusatzversicherung einreichen müssen, als Kostenvoranschlag. Die müssen das mind. 24 Stunden vorher bekommen haben, damit sie genug Zeit haben sich zu überlegen, ob sie diese Privatleistung wirklich in Anspruch nehmen möchten oder nicht. - Dann wird das durchgeführt. - Bei Zahnreinigung besteht die Möglichkeit es direkt vor Ort per Karte zu bezahlen am Terminal oder auch bar (machen die wenigsten). - Oder sie lassen sich eine Rechnung zuschicken. In dem Fall geht es über das Deutsche Rechenzentrum [DZR]. Das haben wir auch ausgelagert, damit wir nicht auf den Außenständen sitzenbleiben. Dann bekommen sie eine Rechnung vom DZR zugeschickt.	- The patients get everything they have to pay for themselves or submit to the supplementary insurance as a cost estimate. They have to receive it at least 24 hours in advance so that they have enough time to decide whether they really want to make use of this private service or not. - Then it [the treatment] will be carried out. - If you have your teeth cleaned, you can pay on the spot by card at the terminal or in cash (very few patients do this). - Or you can have an invoice sent to you. In that case, it goes through Deutsches Rechenzentrum [DZR]. We have also outsourced this so that we do not have outstanding debts. Then patients receive an invoice from the DZR.	- Verbunden mit einer Abrechnungsfirma (Mediserv). 90% der Patienten rechnen wir über Mediserv ab. - Das heißt die haben ihre Behandlung, wir notieren das und schreiben die Rechnung und laden das bei Mediserv hoch und die versenden die Rechnung für uns und machen auch das komplette Mahnwesen und wir zahlen Gebühren an mediserv. - Dann kriegen die Patienten die Rechnung per Post. - Am liebsten ist es uns, wenn die Patienten direkt hier bezahlen entweder bar oder mit kredit oder ec karte. Machen aber die wenigsten, die meisten wollen am liebsten eine Rechnung geschickt bekommen. - Und ein kleiner Teil geht auch über Nelly Zahlungen. Das ist leider noch ein bisschen wenig, das liegt aber daran, dass die Patienten ja bevor sie kommen einen Link bekommen und online ihre Daten an uns übermitteln und dann haben sie die Möglichkeit auszuwählen ob man direkt bei ihnen von der Kreditkarte abbuchen darf oder Lastschrift machen kann. Dadurch dass man aber auch Rechnung anwählen können, nehmen die meisten die Möglichkeit Rechnung und dann wiederum luft es über unseren Zahlungsdienstleister mediserv.	- Connected to a billing/factoring company (Mediserv). We bill 90% of the patients via Mediserv. - That means they have their treatment, we document it and write the invoice and upload it to Mediserv and they send the invoice for us and also do all the dunning. For that we pay fees to mediserv. - Then the patients receive the invoice physically via mail. - We prefer it when the patients pay directly here, either in cash or with credit or ec card. But very few of them do so, most of them prefer to get an invoice sent to them. - A small part also comes through Nelly payments. Unfortunately, this is still a bit low, but that's because the patients get a link before the treatment and transmit their data to us online and then they have the option of choosing whether they can be charged directly from their credit card or have a direct debit. But because you can also choose invoice, most of them take the invoice option and then it goes through our payment service provider mediserv.
How many private patients or patients that have to pay for out-of-pocket expenses do you have per day on average?	- 60 % - 70 %	- 60 % - 70 %	- Rechnen überhaupt nicht mit Krankenkassen direkt ab. Die normalen gesetzlichen Krankenkassen übernehmen keine Heilpraktikerleistungen, dh wir haben kein Kartenlesegerät und rechnen nichts mit den Krankenversicherungen ab. Aber wir haben natürlich auch viele privat versicherte Patienten, also entweder voll oder Zusatzversicherungen. Die kriegen dann Rechnungen zugeschickt die mit Gebührenziffern und Diagnosen versehen sind. Das können sie selber einreichen und müssen dann gucken, was sie davon erstattet kriegen. - Das Verhältnis liegt 60% Selbstzahler und 40% privat Versicherte	- We do not bill with health insurance companies at all. The normal statutory health insurances do not cover alternative practitioner services, i.e. we do not have a card reader, and do not settle anything with the health insurances. But of course we have many privately insured patients, either fully insured or with supplementary insurance. They are sent invoices with fee codes and diagnoses. They can submit these themselves for reimbursement. - The ratio is 60% self-payers and 40% privately insured.

Interview guideline		#4 - DE	#4 - EN	#5 - DE	#5 - EN
[Interview data]					
Name		2.4		2.5	
Date and time		01.12.2022, 12:35 AM		02.12.2022, 9:47 AM	
Place		Phone Call		Phone Call	
Duration		18:36		16:30	
[Questions]					
Payment today	What are the biggest challenges in terms of paying invoices for out-of-pocket medical services for your clinic?	- Bei den Rechnungen nicht mehr, weil da bezahlen wir sehr viel Geld an das Rechenzentrum, damit wir das nicht mehr haben. Ansonsten ist das ein unglaublich zäher Kampf, seinem Geld hinterher zu rennen. Das ist abgesehen davon, dass es mental super anstrengend ist, und fürchterlich ist, das noch machen zu müssen und das auch keiner von uns will, auch das würde enrom Zeit kosten. Da kann ich nicht sagen, dass wir damit Stress haben, weil wir es eben auslagern. - Ohne Selbstzahler und rein privat Versicherte könnten wir die Praxis nicht halten. Man merkt durchaus, wenn mal eine Weile keine privaten Zahlungen reinkommen - Ziel, den Anteil zu erhöhen, würde aber ethisch gegen das sprechen, was wir für richtig halten. Rein wirtschaftlich betrachtet hätte eine Einzelpraxis (in der Medizin sollte es nicht rein wirtschaftlich betrachtet werden müssen) mit reinen Kassenleistungen keine Chance zu überleben. Deshalb ist es von großer Bedeutung, dass Leute auch Zusatzversicherungen haben. Die Patienten haben Zugang zu einer sehr guten Versorgung und bleiben nicht auf gigantischen Kosten sitzen und wir haben keine Außenstände und es funktioniert.	- Not with the bills any more, because we pay a lot of money to the factoring company so that we do not have that any more. Otherwise, it tough to chase the money. Apart from the fact that it is mentally very exhausting and terrible to do that, and none of us wants to do that, it would also take a lot of time. I cannot say that we have any stress because we outsource it. - Without self-payers and privately insured patients, we would not be able to maintain the clinic. You definitely notice when no private payments come in for a while. - However, the goal of increasing the share would ethically speak against what we consider to be right. From a purely economic point of view, a single clinic (in medicine it should not have to be considered purely economic) would have no chance of surviving with purely health insurance benefits. That is why it is of great importance that patients also have supplementary insurance. Patients have access to very good care and are not stuck with gigantic costs and we have no outstanding debts and it works.	- Dadurch dass wir das an Mediserv abgeben, ist die Zahlung der Rechnung keine Herausforderung mehr, weil wir uns nicht drum kümmern müssen. Wir kriegen das Geld garantiert von mediserv. Die kreigen dafür einen haufen gebühren von uns, aber wir sind quasi abgesichert und müssen uns nicht kümmern. - Was aber nervt ist, dass die Patienten davon ausgehen, dass wie wenn sie zum Arzt gehen, die private Versicherung das garantiert übernimmt. Das ist leider nicht so. Das ist leider oft so, dass die privaten Versicherungen das komplett ablehnen, die hier gemacht wurden. Also entweder einzelne Gebührenziffern oder sie sagen sie sehen das gar nicht ein dass eine Behandlung gemacht wurde. Das ist bitter für die Patienten und wollen die auch nicht so hinnehmen, also kommen die Patienten zu uns und sagen könnt ihr das nicht anders abrechnen oder einen Bericht schreiben oder eine Begründung. Das machen wir auch in einem gewissen Umfang, aber das ist so ein bisschen das nervigste an der Abrechnung. - Es ist ein schmaler Grat zwischen Pech gehabt und man aber auch versteht, dass die Patienten denken, dass sie ja eine private Versicherung haben. Manche Versicherungen wollen es einfach nicht übernehmen.	- By handing it over to mediserv, the payments of the invoices is no longer a challenge because we do not have to worry about it. We get the money guaranteed from mediserv. They charge us a lot of fees for it, but we are more or less covered and do not have to worry about it. - But what is annoying is that patients assume that, like when they go to the doctor, the private insurance company is guaranteed to cover it. Unfortunately, that is not the case. Unfortunately, it is often the case that the private insurances completely reject what has been done here. Either individual fee figures or they say they do not even see that a treatment has been carried out. That is bitter for the patients and they do not want to accept it, so the patients approach us and request a re-writing of the invoice or write a report or a justification. We do that to a certain extent, but that is the most annoying thing about billing. - It is a fine line between being unlucky and also understanding that patients think that they have private insurance. Some insurance companies just do not want to cover it.
	How satisfied are you with your current payment process?	- Sehr zufrieden	- Very satisfied	- Früher haben wir jeden Geldeingang selbst kontrolliert. Das wäre mittlerweile viel zu aufwändig. Von daher sind wir schon zufrieden wie es jetzt läuft.	- We used to check every incoming payment ourselves. That would be much too time-consuming now. That is why we are satisfied with the way things are going now.

	Interview guideline	#4 - DE	#4 - EN	#5 - DE	#5 - EN
	[Interview data]				
	Name	2.4		2.5	
	Date and time	01.12.2022, 12:35 AM		02.12.2022, 9:47 AM	
	Place	Phone Call		Phone Call	
	Duration	18:36		16:30	
	[Questions]				
Payment today	Which role does "factoring" play in your practice? If you use factoring, could you please describe the process? How satisfied are you with the process? How high is the share between factoring and direct payments?	- Factoring spielt eine große Rolle - Nach der Optimierung durch die Abrechnung (Dentapool), die über unsere Dokumentation drüber gucken und die Rechnungen fertigstellen und dann können wir gebündelt in einer Datei an das Rechenzentrum rausschicken. - Die haben einige Krankenkassen eine App, in die das direkt vom DZR eingespeist wird und andere bekommen das per Post. - Factoring 99%, 1% bezahlen in der Praxis - 1% sind Summen, die nicht wahnsinnig hoch sind. Man hat ja über die Jahre auch eine Bindung zu den Patienten, dann fühlen die sich auf die Füße getreten, wenn man sagt, unterschreiben sie das mal hier. Dann sagt die ältere Dame "also ich hab meine Rechnung immer bezahlt", dann machen wir das über die Praxis. Ist dann ein Vertrauensding. Trotzdem sind das nicht die großen Summen.	- Factoring is very important - After optimisation by the accounting company (Dentapool), they check our documentation and finalise the invoices and then we can send them bundled in a file to the factoring company. - Some health insurance companies have an app where it is fed directly from the DZR and other patients receive it physically via mail. - Factoring 99%, 1% are paying directly in the clinic - 1% are sums that are not insanely high. Over the years, you have built up a relationship with your patients, and they feel offended when you ask them to sign several documents [e.g. "Abtretungserklärung"]. Then the older lady says, "Well, I've always paid my bill," and we do it directly through the clinic. It's a matter of trust. Nevertheless, these are not large sums.	- Leistung wird von den Mitarbeiterinnen eingetragen und ich erstelle dann aufgrund dieses Eintrags eine Rechnung und lade die aus unserem Rechnungssystem in das Mediserv System hoch und dann ziehen sie sich das daraus und versenden die einfach per Post. - Und dann kriegen die Patienten die Rechnung und wenn sie die nicht bezahlen dann kriegen sie von Mediserv eine Mahnung und noch eine und wenn es dann immer noch nicht bezahlt ist, dann gehts zum Rechtsanwalt und letzten Endes auch vor Gericht. Das kriegen wir aber nur mit, wenn es wirklich so weit ist, dass es vor Gericht gehen soll. Dann kriegen wir einen Hinweis darüber ob das in unserem Sinne ist, dass diese Patienten jetzt vor Gericht gezogen werden. Dann können wir immer noch sagen nee das ist ein Versehen, das regeln wir so. - Aber in dem Moment wo ich es aus unserem Rechnungssystem bei denen hochlade ist es für uns erledigt, da kümmere ich mich überhaupt nicht mehr drum. - 90% über Mediserv	- The treatment is documented by the medical staff and I then create an invoice based on this and upload it from our invoicing system into the Mediserv system and then they extract it from that and simply send it via mail to the patients. - And then the patients receive the invoice and if they do not pay it then they receive reminder from Mediserv and if it is still not paid then it goes to the lawyer and finally also to court. But we only get to know that when it is really time to go to court. Then we get a hint about whether it is in our interest that these patients are now being taken to court. We can still say no, that is a misunderstanding, we'll deal with it another way. - But the moment I upload it from our billing system to them, it is done for us, I do not have to worry about it anymore. - 90% via Mediserv
	Do you get feedback from patients on how satisfied they are with the payment processes? If so, what is the feedback like?	- Also man kann schon sagen, wir sind nicht die erste Praxis die das macht. Also man merkt, die Leute werden an verschiedenen Stellen damit konfrontiert, dass sie sowas unterschreiben müssen. Das kommt schon regelmäßig vor, dass Leute, vor allem Neupatienten die am Anfang alles ausfüllen müssen (z.B. Anamnese), dann sagen die "Das sind aber viele Unterschriften die ich hier leisten muss, was unterschreibe ich da eigentlich? Kommt mir ein bisschen ungewohnt vor, möchte ich eigentlich nicht so gerne". Da gibts schon Leute die nachfragen, aber der größte Teil kennt es aus anderen Bereichen und akzeptiert es. - Vorher noch nie vor Prozessumstellung Patienten mit einbezogen	- So you can say that we are not the first clinic to do this. So you notice that people are confronted with the fact that they have to sign something like this at various points. It happens regularly that people, especially new patients, who have to fill out everything at the beginning (e.g. anamnesis), say, "That's a lot of signatures I have to make here, what am I actually signing? It seems a bit unusual to me, I don't really want to do it". There are people who ask, but most of them know it from other areas and accept it. - Patients had never been involved in process changes.	- Die meisten sind es schon irgendwie gewöhnt, dass sie Rechnungen für bestimmte Dinge über solche Zalungsdienstleister bekommen. - Ich persönlich finde es besonders komisch, dass es alles per Post versendet wird. Das haben die Nellys uns aber auch erklärt. Gibt einen komischen Grund, dass es auf keinen Fall per E-Mail geht. - Das Ding ist, dass wir relativ unregelmäßig Abrechnungen machen. Also nicht jeden Tag nach den Behandlungen, sondern so ein bisschen wie wir es schaffen. Also manchmal auch nur zwei mal im Monat und dann kommt so ein riesen Haufen zusammen. Wenn wir es aber öfter schaffen, dann kriegen manchmal Patienten für jede einzelne Behandlung die sie gemacht haben, manche kommen 2 bis 3 mal die Woche, eine einzelne Rechnung. Das liegt aber nicht an mediserv, sondern wie regelmäßig oder unregelmäßig wir die Abrechnung machen und hochladen.	- Most people are already used to receiving invoices for certain things via such service providers. - Personally, I find it particularly strange that everything is sent via mail. But that is what Nelly explained to us. There is a weird reason that it cannot be done by email. - The thing is that our billing is relatively irregular (not every day after the treatments, more like time allows us). Sometimes it is only twice a month, and then we end up with a huge pile. But if we manage to do it more often, then sometimes patients receive a single invoice for every single treatment they have had, some patients come 2 or 3 times a week. But that is not because of mediserv, but because of how regularly or irregularly we do the billing and upload it.

Interview guideline		#4 - DE	#4 - EN	#5 - DE	#5 - EN
[Interview data]					
Name		2.4		2.5	
Date and time		01.12.2022, 12:35 AM		02.12.2022, 9:47 AM	
Place		Phone Call		Phone Call	
Duration		18:36		16:30	
[Questions]					
Payment future	Please describe the ideal payment process in your clinic.	- Eigentlich völlig in Ordnung, das läuft schon ziemlich reibungslos ab. Es sit eine Frage wie viel ist man bereit dafür zu bezahlen. Man könnte die Abrechnung reintheoretisch auch selbst machen, weil das Rechenzentrum lässt sich ja auch gut bezahlen. - Dadurch dass wir durch das Rechenzentrum die Liquidität aufrecht erhalten, haben wir an der Stelle die Möglichkeit, unsere Zahntechniker (locker mal im fünfstelligen Bereich), können wir mit Skonto überweisen. Die Prozente können wir an das Rechenzentrum wieder abtreten. Ein Kreislauf, der sich für uns wieder lohnt. Wir würden das nicht mehr anders machen.	- Actually, it is fine, it is pretty smooth. It is a question of how much you are willing to pay for it [the factoring service]. Theoretically, you could also do the billing yourself, because the factoring company charges a rather high fee. - Because we maintain liquidity through the factoring company, we have the possibility to pay our dental technicians (which is easily in the five-digit range) with a discount (skonto). We can then transfer the percentages back to the factoring company. A cycle that pays off for us again. We would not change it.	- Mehr Direktzahlungen, liegt auch an mir und von mir selbst ausgehe und mir das unangenehm ist viel Geld auf einmal zu bezahlen; lieber eine Rechnung da liegen und kann das nochmal zwei Wochen nach vorne schieben (planbar) - Das ist auch genau der Punkt gewesen mit Nelly. Dann sollen sie sich entscheiden ob sie entweder mit Kreditkarte oder Lastschrift bezahlen wollen, aber dann habe ich gemerkt, wenn man nur diese beiden Möglichkeiten gibt, fühle ich mich nicht so richtig wohl, dass man die Leute zwingt, dass es sofort eingezogen wird und nicht die Möglichkeit hat, selbst zu entscheiden wann man überweisen möchte. Deswegen haben wir dann doch noch die Möglichkeit Rechnung bei Nelly mit reingenommen und jetzt wählen alle Rechnung aus, das war so auch nicht gedacht. Liegt daran, wie man das verkauft. Wenn man im Geschäft was teures kauft muss man ja auch direkt zahlen. Deswegen eigentlich müsste man es wahrscheinlich einfach einfordern. - Bei Nelly nicht so cool, dass man die Zahlung vor dem Gespräch angibt - Man muss die Leute ein zu Direktzahlungen zwingen - Manchmal hat man die Zeit auch nicht die Karte durchzuziehen, geht schneller, wenn man sagt die kriegen die Rechnung zugeschickt und tschüss	- More direct payments, that is also up to me and I am assuming from myself that I would not feel comfortable paying such a big chunk of money at once. Sometimes I prefer to have an invoice lying there and can push it forward another two weeks because I know I will have more money by that time. - That was exactly the point with Nelly. Patients should decide whether they want to pay by credit card or direct debit, but if you only give them these two options, I do not really feel comfortable that you force people to have us take it out of their account immediately and you don't have the option of deciding for yourself when you would like to transfer it. That is why we added the invoice option to Nelly and now everyone chooses invoice. It is a matter of how to sell it. If you buy something expensive in a shop, you have to pay for it directly. That is why you would just have to ask the patients for it. - With Nelly, it is not so convenient to ask for the payment before the treatment. - You have to force people a bit more to pay directly. - Sometimes you do not have the time to accept card payments either. Sometimes it is quicker to say you will send them the invoice and goodbye.
	Which payment methods would you prefer?	- EC Karte ist in Ordnung, da haben wir keine Vorlieben. Kann auch verstehen, wenn man als Patient sagt man hat es abgehakt. Vom angenehmen Faktor gut für Patienten, aber für uns relativ egal.	- EC card is fine, we do not have any preferences. I can also understand when patients say want to complete the process directly after treatment. The convenience factor is good for patients, but relatively unimportant for us.	- EC-Karte direkt vor Ort, weil es kostet weniger Gebühren als Kreditkarte oder eben bar - Aber die meisten zahlen mit Kreditkarte	- EC-card directly on site, because it costs less fees than credit card or cash. - Most people pay with credit card
	What role should factoring play for you? What would increase your satisfaction?	- Fehler in der Abrechnung passieren, Abrechnungspositionen werden einem als Zahnmedizinstudentin nie beigebracht und man kommt in die freie Wilbahn und hat keine Ahnung wie man Geld verdient. Auch als Assistenzarzt sind die Chefs in der Regel nicht daran interessiert, das großartig weiterzugeben, weil a) unfassbar viel Aufwand in Deutschland und b) dass die Sprösslinge genau durchsteigen finanziell und genau wissen, wie viel Umsatz sie erbringen. Wenn man das allein emachen möchte, muss man sich echt reinarbeiten und das ist ein gigantischer Aufwand und den betreiben die wenigsten weil der Job auch echt fordernd ist.	- Billing errors happen, because billing is never taught as a dental student and you come to the clinic and have no idea how to earn money. Even as an assistant doctor, the managers are usually not interested in passing on the knowledge because a) this is an incredible amount of work in Germany and b) the offspring have to get through exactly financially and know exactly how much turnover they generate. If you want to do it on your own, you really have to work your way in and that is a huge effort, and very few people do it because the job itself [doctor] is also really demanding.		

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b. Patients

	Interview guideline	#5 - DE	#5 - EN	#6 - DE	#6 - EN	#7 - DE	#7 - EN
[Interview data]							
	Number	1.5		1.6		1.7	
	Date and time	14.11.2022, 6:54 PM		16.11.2022, 6:57 PM		17.11.2022, 12:15 AM	
	Place	Phone call		Phone call		Phone call	
	Duration	19:19		10:31		12:00	
[Questions]							
General	How old are you?	53		27		22	
	What is your state of insurance?	Gesetzlich	Statutory	Gesetzlich	Statutory	Gesetzlich	Statutory
	What type of clinic do you visit how often per year?	1x pro Jahr Zahnarzt, alle zwei Jahre zum Kardiologen, 1x pro Jahr Hautarzt, 1x Gyn	1x per year dentist, cardiologist every two years, 1x per year dermatologist, 1x gynecologist	Zahnarzt 2 x im Jahr, Hausarzt 4 x im Jahr, Hautarzt 1x im Jahr, eher weniger, Gynäkologie 1x im Jahr	Dentist 2 x a year, Family doctor 4 x a year, Dermatologist 1x a year, Gynecologist 1x a year	Hausarzt 1x im Jahr, Zahnarzt 2x im Jahr, Außerordentlich Chirurg + Orthopäde 2x im Jahr wg. Verletzung	Family doctor 1x a year, Dentist 2x a year, Extraordinary surgeon + orthopedist 2x a year due to injury
	How was the process of the visit?	- Gut - Neuerdings auf Plattform anmelden für Online Terminbuchung - Bar oder mit Karte zahlen und die geben eine Rechnung mit - Gut durchgetaktet, fast keine weiteren Besucher im Wartebereich - Datenschutzerklärung unterschreiben auf Tablet mit Finger, darüber hinaus	- Good - Recently scheduling appointment via digital tool - Payment cash or card and take invoice home - Not many patients waiting --> good appointment scheduling - Sign data privacy on a tablet	- Terminvereinbarung meist online, man bekommt später einen Termin - Am Telefon eher akut und geht schneller - Karte am Empfang einlesen - Manchmal danach noch neuer Termin oder Rezept mitnehmen, eigentlich ist es aber mit der Behandlung vorbei	- Appointment mostly online, you get an appointment later - On the phone rather acute and goes faster - Scan insurance card at the reception - Sometimes afterwards new appointment or prescription, but usually the process is over with the treatment	- Anruf zu Beginn der Sprechstundenzeit und Nachfrage nach schnellstmöglichem Termin - Zeitraum von zwei Stunden, weil relativ kurzfristig ein Termin benötigt wurde über 2h warten - Im Gespräch wurde eine Diagnose gestellt - Danach mit Krankschreibung nach Hause	- Call at the beginning of office hours and request for appointment as soon as possible - Period of two hours because an appointment was needed at relatively short notice - Waiting for more than 2h - In the conversation a diagnosis was made - Afterwards with sick note home
	What are the biggest challenges that you are confronted with when visiting a medical clinic?	- Zeitnah einen Termin zu bekommen - Wartezeit in der Praxis hat sich positiv entwickelt	- Schedule an appointment in a timely manner - Waiting time in clinic changed positively	- Terminvereinbarung ist richtig nervig, man bekommt nie jemanden ans Telefon wenn es akut ist - Insbesondere Fachärzte sind nicht erreichbar	- Appointments are really annoying, you never get anyone on the phone when it is acute - Especially specialists are not available	- Termin zu finden, der auch in den eigenen Kalender passt bzw. die Erreichbarkeit der Praxis erstmal - Herauszufinden in welche Praxis kann man überhaupt gehen - Keine Praxis hat eine richtige Internetseite, wichtig um die Leistungen der Praxis herauszufinden und um Bewertungen zu lesen, Erreichbarkeit eigentlich	- Finding an appointment that fits into one's calendar and the availability of the practice for the first time - To find out in which practice one can go at all - No practice has a proper website, important to find out the services of the practice and to read reviews, accessibility actually

Interview guideline	#5 - DE	#5 - EN	#6 - DE	#6 - EN	#7 - DE	#7 - EN
[Interview data]						
Number	1.5		1.6		1.7	
Date and time	14.11.2022, 6:54 PM		16.11.2022, 6:57 PM		17.11.2022, 12:15 AM	
Place	Phone call		Phone call		Phone call	
Duration	19:19		10:31		12:00	
[Questions]						
Please describe the current payment process of your medical bills (e.g. for a professional teeth cleaning)	- Zahnarzt: Rechnung direkt mitgegeben + Überweisung per online banking - Beim Gyn: Rechnung per Post oder Mail über Abrechnungsgesellschaft, dann wieder Überweisung per Online Banking	- Dentist: Received invoice in clinic and transferred money via online banking later - Gyn: Received invoice from billing company (physically or email) and transfer money via online banking	- Zahnreinigung wurde durchgeführt, danach wurde gefragt ob Rechnung mitnehmen oder per Papier per Post - Per Post nach 1,5 Wochen und dann per Online Banking überwiesen	- Dental cleaning was performed, then asked whether to take invoice or by paper by mail - Received invoice by mail after 1.5 weeks and then paid via online banking	- Beim Zahnarzt wird gefragt wie bezahlt werden soll bzw. ob Rechnung zugeschickt werden soll - Rechnung wird 3 - 4 Wochen später zugestellt und dann muss entsprechender Betrag innerhalb der Frist überwiesen werden - Andere Alternative nicht bekannt, seines Wissens nach geht Rechnung per Mail nicht, vermutlich wäre noch möglich bar zu bezahlen	- At the dentist you are asked how to pay or whether invoice should be sent - Invoice is sent 3 - 4 weeks later and then the corresponding amount must be transferred within the deadline - Other alternative not known, to his knowledge invoice by mail does not work, probably would still be possible to pay cash
How often, per year, do you have to pay the treatments yourself?	< 50%	< 50%	2,5x im Jahr (Zahnarzt und Hautscreening)	2,5x per year (dentist and dermatologist)	2x im Jahr, ca 30%	2x per year, ca. 30%
What are the biggest challenges that you are confronted with when paying your medical invoices?	- Online banking funktioniert gut - Ansonsten keine Herausforderung	- Online banking works well - No challenge	- Nervt, dass man selbst was bezahlen muss - Wenn Rechnung per Post kommt ist es schon eine Woche her, dass man die Behandlung hatte und dann kommt manchmal noch eine Mahnung weil man es vergisst, aber ist nicht dramatisch	- Annoying that you have to pay something yourself - When the invoice arrives by mail it is already a week since you had the treatment and then sometimes another reminder comes because you forget, but is not dramatic.	Im Blick zu behalten, dass man sie bezahlen muss, taucht so in Kosten/zukünftigen Kosten nicht auf, weil er das digital sonst auf dem Handy hat	Keeping in mind that you have to pay them, so does not appear in costs/future costs, because he has that digitally otherwise on the cell phone
How satisfied were you with the payment process?	Gut zufrieden	Satisfied	- Wäre nett, wenn man mit Karte bezahlen könnte - Beim Hautarzt konnte man mal in bar bezahlen, was auch ganz nett war	- Would be nice if you could pay with card - At the dermatologist you could pay in cash once, which was also quite nice	Im Rahmen der Überweisung ist es nur seine Aufgabe die Überweisung richtig zu tätigen, es werden eben keine anderen Möglichkeiten geboten, deswegen so lala zufrieden	Within the framework of the transfer, it is only his task to make the transfer correctly, there are just no other options offered, therefore medium satisfied

Left vertical label: Payment today

Interview guideline		#5 - DE	#5 - EN	#6 - DE	#6 - EN	#7 - DE	#7 - EN
[Interview data]							
Number		1.5		1.6		1.7	
Date and time		14.11.2022, 6:54 PM		16.11.2022, 6:57 PM		17.11.2022, 12:15 AM	
Place		Phone call		Phone call		Phone call	
Duration		19:19		10:31		12:00	
[Questions]							
Payment future	Please describe the ideal future payment process for a medical clinic visit if you could improve it.	- Automatisch Bankdaten beim Arzt hinterlegen und der das anweist per Lastschrift (gut auch für ältere Leute, die nicht so firm sind im online banking)	- Place bank data at clinic and deduct amount via direct debit which is also good for older people who are not that used to online banking	- Wenigstens schon mal vor Ort bezahlen mit Karte oder auch paypal - Oder Rechnung digital sodass man sich connecten kann (per click auf dem Handy direkt bezahlen), weil sonst müssen Daten abgetippt werden	- At least already pay in the clinic with card or even paypal - Or invoice digital so that you can connect (pay by click on the cell phone), because otherwise data must be typed	Praxis hinterlegt entweder auf der Internetseite oder in der App die Leistungen die in Anspruch und dann gibt es verschiedene Bezahlmöglichkeiten für den Betrag der noch gezahlt werden muss, dass das digital funktioniert	Practice desposits either on the website or in the app the services that are in claim and then there are different payment options for the amount that still needs to be paid that this works digitally
	Which payment methods would you prefer?	- Paypal ist easy (allerdings nur unter Freunden) - Kwitt - Lieber noch Online banking für medizinische Leistungen	- Paypal which is easy for friends - Kwitt - For medical services online banking	- Muss nicht paypal sein, aber irgendwas digitales - Bar auf jeden Fall nicht - Am liebsten mit EC-Karte	- Does not have to be paypal, but something digital - Cash in any case not - Preferably with debit card	Rechnung (damit man nochmal überlegen kann ob alles stimmt und Ausgaben besser zu managen) oder Direktzahlung per Kreditkarte	Invoice (so that you can reconsider if it is all true and to better manage expenses) or direct payment by credit card
	What is important to you when it comes to the payment of medical bills? What would have saved you time?	- Rückmeldung bekommen, wenn man die Rechnung online überwiesen hat	- Receive notification if invoice is paid	- Lastschriftverfahren: auch nett wenn man das einziehen lassen könnte, wenn es eh immer der gleiche Betrag ist (wie zb bei Zahnreinigung) - Nervig wenn man Rechnung per Post bekommt und es im Online Banking selbst eintippen muss	- Direct debit: also quite nice if you could have them collect it if it's always the same amount anyway (like for dental cleaning) - Annoying if you recieve the invoice via mail and then have to type it in yourself in online banking	Viel Zeit sparen wenn alles im Einklang mit der Krankenkasse funktionieren würde, mehr Einheitlichkeit, auch zwischen den Arztpraxen dass man nicht verschiedene Zahlungsmethoden zwischen den verschiedenen Ärzten hat	Save a lot of time if everything would work in accordance with the health insurance, more uniformity, also between the medical practices that you don't have different payment methods between the different doctors
	Do you perceive the payment of medical bills different than the payment of bills from e.g. online shopping?	- Bei Freunden hat man direkt die Rückmeldung, dass das Geld angekommen ist, höhere Vertrauensbasis - Beim Arzt möchte sie das selbst vom Konto machen	- With friends you have a trust basis and receive the feedback if the money was received - With clinics there is no trust basis and she wants to do it herself from her account	- Medizinische Leistungen nerven mehr ("warum muss man dafür extra was bezahlen, man ist ja schließlich krankenversichert?") - Nimmt es negativ wahr - Ein Rabattcode würde das Gefühl positiver machen	- Medical services are more annoying ("why do you have to pay extra for that, you have health insurance after all?") - Perceives it negatively - A discount code would make it feel more positive	- Medizinische Leistungen hat man das Gefühl, dass es wichtiger ist, dass sie direkt bezahlt werden als Kleidung oder andere Sachen, die man online bestellt - Digitales Zusammenspiel zwischen Ärzten, dass digitaler und einfacher gehen kann bspw durch digitale Krankenakte die Krankenkasse vorliegt und dann von verschiedenen Ärzten abgerufen wird	- Medical services one has the feeling that it is more important that they are paid directly than clothing or other things that you order online - Digital interaction between doctors, that this can go more digital and easier, e.g., through digital medical records that are available to the health insurance company and that can then be accessed by different doctors

Interview guideline	#8 - DE	#8 - EN	#9 - DE	#9 - EN
[Interview data]				
Number	1.8		1.9	
Date and time	17.11.2022, 12:47 AM		21.11.2022, 4:20 PM	
Place	Phone call		Google Meet	
Duration	06:35		15:12	
[Questions]				
How old are you?	79		46	
What is your state of insurance?	Gesetzlich	Statutory	Gesetzlich	Statutory
What type of clinic do you visit how often per year?	2x beim Arzt dieses Jahr	2x at the doctor this year	Zahnarzt 2x mal im Jahr	Dentist 2x per year
General — How was the process of the visit?	Anrufen für Terminvereinbarung, fährt lieber persönlich hin und lässt es aufschreiben und holt das Rezept	Call for appointment, prefers to go in person and have it written down and get the prescription	- Terminbuchung: Anrufen und nach Termin fragen, Bestätigung + Erinnerung über Doctolib - In der Praxis muss man sagen wer man ist und man gibt Krankenkassenkarte ab, Daten werden gegengecheckt und es wird erkannt dass man die Person ist, die den Termin vereinbart hat - Danach darf man gehen, wenn alles gut ist; ansonsten evtl. Terminvereinbarung für Folgetermin	- Schedule an appointment: call and ask for appointment, confirmation + reminder via Doctolib - In the clinic you must say who you are and present your health insurance card, the data will be verified and that you are the person who made the appointment - After that, you can leave if everything is fine; otherwise, you can schedule a follow-up appointment
What are the biggest challenges that you are confronted with when visiting a medical clinic?	Dass es im Wartezimmer immer so voll ist	That it is always so crowded in the waiting room	- Hinzugehen, Arztbesuche allgemein sind eher unter Zwang, man weiß dass man sie machen muss wegen Vorsorge oder weil man sie wahrnehmen muss - Könnte man ohne sie leben, würde man niemals zum Arzt gehen - Sehr mentale Geschichte	- Going to the doctor, visits to the doctor in general are more under duress, you know you have to do them for preventive care or because you have to do them - If you could live without them, you would never go to the doctor - Quite a mental issue
Payment today — Please describe the current payment process of your medical bills (e.g. for a professional teeth cleaning)	- Gibt keine Ärzte, für die Rechnungen bezahlt werden müssen - Beim Zahnarzt: was abgebrochen vom Zahn, da musste was nachgezahlt werden - Die haben per Post eine Rechnung zugeschickt und dann ist sie zum Arzt gegangen und hat es direkt vor Ort bar bezahlt	- There are no doctors for which bills must be paid. - At the dentist: something broke off from the tooth, there had to be paid something extra - They have sent by mail an invoice and then she went to the doctor and paid it directly in the clinic in cash	- Durch langjähriger Patient beim Zahnarzt ist der Ablauf immer der gleiche - Im Behandlungszimmer muss Dokument (Abtretungsvereinbarung) unterschrieben werden - Er interessiert sich dann nur dafür, welcher Factoring-Anbieter das ist - Rechnung kommt ca. 1 Monat später per Post, immer noch mit Zahlscheinvordruck - Überweisung per online banking	- Through many years of being a patient at the dentist, the procedure is always the same - In the treatment room document (assignment agreement of invoice [factoring]) must be signed - He is then only interested in which factoring provider the clinic uses - Physical invoice arrives approx. 1 month later by mail, still with payment form - Transfer via online banking
How often, per year, do you have to pay the treatments yourself?	-	-	2x im Jahr (alle Behandlungen)	2x per year (every treatment)

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Payment today	What are the biggest challenges that you are confronted with when paying your medical invoices?	Gar nicht schwierig, kennt die Helferin schon lange und die bedankt sich und dann kann sie wieder gehen	Not difficult at all, knows the helper for a long time and thanks her and then she can go again	- Sichergehen, dass alle Daten richtig bei der Überweisung eingegeben werden (IBAN, Verwendungszweck)	- Make sure that all the data is entered correctly in the transfer (IBAN, reference)
	How satisfied were you with the payment process?	-	-	- Nicht drüber nachgedacht - Fast die einzige Rechnung, die man im laufe eines Jahres noch so bezahlt. Man bekommt kaum andere Rechnungen, die man selber auslösen muss - Sich darüber Gedanken zu machen kommt im täglichen Leben nicht auf - Mentale Einstellung, weil man zum Arzt gehen muss, liefert man sich den Prozessen dort aus und akzeptiert das, weil man selber den Arztbesuch für das eigene Wohlbefinden benötigt. Das Wohlbefinden ist sehr viel höher gestellt, als sich Gedanken darüber zu machen, wie die Abläufe oder Zahlungsmethoden in der Praxis sind.	- Not thought about it - Almost the only invoice you pay in the course of a year. You hardly get any other bills that you have to pay yourself - Thinking about it does not occur in daily life - Mental attitude, because one must go to the doctor, one delivers oneself to the processes there and accepts that, because one needs the doctor's visit for the own well-being. Well-being is put much higher than worrying about what the processes or payment methods are like at the clinic.
Payment future	Please describe the ideal future payment process for a medical clinic visit if you could improve it.	- Würde Bezahlprozess genau so wieder machen - Die sagen immer die Rechnung kriegen Sie geschickt, dann macht sie das wieder so fürs erste	- Would do payment process exactly the same again - They always say the bill will be sent to you, then do it again so for now	- Ein Fortschritt wäre, dass man in der Arztpraxis sofort zahlen könnte. Kann man bei bestimmten Leistungen machen, wenn man im Vorwege den Betrag ungefähr weiß - Hängt aber davon ab, ob sie die Mitarbeiter in der Praxis haben, die sich darum kümmern können - Sofort vor Ort zahlen	- One advance would be to be able to pay immediately at the doctor's office. Can be done for certain services, if you know in advance the approximate amount. - But depends on whether they have the staff in the practice to take care of it - Pay immediately in the clinic

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	Which payment methods would you prefer?	Barzahlung	Cash payment	EC Karte	Debit card
	What is important to you when it comes to the payment of medical bills? What would have saved you time?	Nein	No	- Generell interessiert daran bei Behandlungen zu wissen, welche Preise dahinter stehen und was überhaupt zu zahlen ist (auch bei Kassenleistungen) - Keine Ahnung, was der Arzt abrechnet und was das kostet (beim Hausarzt mehr, weil dort weniger an Eigenleistungen zu zahlen ist)	- Generally interested in knowing what prices are behind treatments and what has to be paid at all (also for services covered by health insurance) - No idea what the doctor charges and what it costs (at the family doctor more often, because there is less to pay as out-of-pocket expenses)
Payment future	Do you perceive the payment of medical bills different than the payment of bills from e.g. online shopping?	-	-	- Im Onlineshopping werden wesentlich mehr Zahlungsmethoden angeboten, die Arztpraxen aufgrund ihrer Infrastruktur oder aufgrund der Kassenanteile nicht anbieten können - Vielfalt, was unterschiedlich abgerechnet werden muss und unterschiedliche Kundenwünsche als kleine Praxis unter einen Hut zu bekommen ist schwierig, sodass sich eine einzelne Praxis sich damit nicht auseinander setzen kann - Mentale Geschichte: Wenn man zum Arzt geht, akzeptiert man die Dinge so wie sie sind, weil das nicht der primäre Fokus ist und sich deswegen keine Gedanken über die Prozesse macht und die Praxen zu klein sind, um sich über die Abrechnung Gedanken zu machen	- Online shopping offers many more payment methods that medical practices cannot offer due to their infrastructure or due to the share of health insurances - Variety, what needs to be billed differently and reconciling different customer preferences as a small practice is difficult, so a single practice cannot afford to deal with it - Mental issue: When you go to the doctor, you accept things as they are because that is not the primary focus and therefore don't worry about the processes and practices are too small to worry about billing

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