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Implementing Case Management in Germany

an exploratory study

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Abstract

Comparing recent OECD health care statistics, it becomes apparent that the German health care system is lacking behind other countries with regard to health care efficiency indicators. Moreover, demographic developments towards an aging population are calling for interventions to increase cost efficiency in the German health care system while maintaining or increasing its high quality. One intervention, which has been implemented in recent years, was Case Management – a collaborative process between a care-intensive patient and a Case Manager designed to guide and facilitate the efficient treatment path through the health care system. Despite its proven effectiveness, Case Management in Germany is far from reaching its potential and several indications hint towards the existence of obstacles of further implementing the intervention. Consequently, the aim of this thesis was to explore the perceived obstacles to further implementing Case Management in Germany. A qualitative, exploratory methodology was adopted and interviews were conducted with a total of 24 stakeholders of Case Management in Germany. Hereby, six main obstacles were identified and set into context with our theoretical framework, which we based on principles of Variation Management and Lean Thinking. Setting our findings in context with theory and also with a conceptual Case Management process model enabled us to validate the impact of the obstacles in a theoretical service process setting. Hence, we could contribute practical implications for practitioners as well as theoretical implications for the applicability of Variation Management and Lean Thinking towards Case Management.

Key Words:

Health Care, Case Management, German Health Care, Obstacles, Case Management implementation, Case Management process, Case Management conceptualization, Variation Management, Lean Thinking, Lean health care

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1 Introduction

Right in this moment, Mr. Fox (55) enters once again the Santa Lucia hospital in Hamburg, Germany. It is the tenth time this year.

Meanwhile, Mr. Fox's health insurance is worried because this hospital admission further increases the expenses for Mr. Fox's care consumption (out-patient care with specialists, medication, and in-patient care in hospitals). They assume that a significant amount of these care contacts could have been avoided if somebody had overseen Mr. Fox's condition and proactively intervened in the course of treatment.

Such an intervention might be necessary and reasonable because Mr. Fox is not the average patient, but a care-intensive one; he is suffering from multiple chronic diseases, namely diabetes, heart insufficiency, and depression. The medical term for Mr. Fox's disease profile is „multi-morbid". For Mr. Fox the standard care processes do not work well, because his needs are irregular, unpredictable, and intertwined.

1.1 Research Problem

The introductory story illustrates a given situation in Germany where standard care processes, which are designed for the majority of 'average' patients, do not fit the unpredictable and complex needs of the minority of care-intensive patients (chronic, multi-morbid, and/or old).

Care-intensive patients frequently but irregularly require care from different health professionals in in-patient and out-patient care settings. Hereby, the outcome of their treatment depends on the effective transition of care between the health professionals involved (Coleman, 2003). The system however does not ensure that health care elements developed with one professional are communicated and connected to the next professional. Instead, health care institutions operate independently as "silos", and the system's set-up, e.g. reimbursement, does not encourage or even allow following the patient's flow through different care settings. As a consequence, the care process of care-intensive patients is sub-optimal in terms of the treatment quality outcome and entails redundancies or unnecessary loops that account for high and avoidable costs.

Having high and avoidable costs is a critical issue, not least since the German health care system is among the most expensive ones according to latest OECD statistics (OECD, 2012). Care consumption and costs within the diagnosis categories to which chronic diseases account are high in comparison to other categories. Moreover, in comparison with other countries, the German health care system can be regarded as inefficient. Efficiency indicators such as the

number of hospital beds, the number of hospitalizations, the number of care contacts, or the average length of stay are above average in Germany (OECD, 2012), indicating that both care resources and care consumption is higher than economically and medically necessary. This is even more important in light of the fact that the demographic development in Germany is demanding more efficient utilization of resources.

With regard to these economic factors and the sub-optimal treatment of care-intensive patients, different institutions in the German health care system have implemented an intervention for care-intensive patients called *Case Management*. Meaning, a Case Manager engages in a collaborative process with the patient. Together they assess, plan, monitor and evaluate the options and services that are supposed to meet the individual patient's needs in the highest quality, and most cost-effective way (Ouwens, Wollersheim, Hermens, Hulscher, & Grol, 2005).

In general, the Case Management implementation follows a generic five-step process specified by (Wendt, 2005), aimed to improve the coordination of the patient's care process (Löcherbach, Klug, Wendt, & Remmel-Faßbender, 2002). This goal is highly consistent across Case Management implementations (Ouwens et al., 2005).

Regardless of who provides or executes a Case Management program, several factors strongly suggest that the potential of has not yet been reached. Experts in the field – who we interviewed in the context of a pre-study – pointed out that Case Management, despite being successfully implemented in some health care institutions, is far from fulfilling its potential. Furthermore, they referred to difficulties, suggesting that there are obstacles hindering the full realization of Case Management. This indication was supported by our secondary research about Case Management programs in Germany. Considering that Case Management has proven to show positive effects when being implemented, the apparent research question is about what is currently in the way of further implementing Case Management in Germany in order to fulfill its potential.

So far, the obstacles of implementing Case Management have been widely neglected in literature about Case Management, both in the narrow German as well as in the international context. Apart from a few studies about the overall perception of patients, physicians and Case Managers respectively, which propose single facilitators and limitations such as incentives for stakeholders or trust of patients (Jochen Gensichen et al., 2012; Olbort et al., 2009; Peters-Klimm et al., 2009; Steinman, Cristofalo, & Snowden, 2012), a holistic

investigation of stakeholders' perception with a focus on obstacles, is currently missing and constitutes a gap in literature.

This gap in research was already stressed by Norris et al. (2002) and literature to date is still insufficient to explain our observation, in particular considering our geographical scope being Germany. Other interrelated aspects such as the practical experiences and perceptions have largely remained unexplored. We thus build on the call of Norris et al. (2002), who highlight the significance for research on key barriers perceived by a wide range of stakeholders and Löcherbach, (2003), who stresses the significance for studies about the implementation of Case Management.

In the absence of tested or recommended theory and after having evaluated the theoretical fields of Innovation Management and Change Management we followed an operational perspective for studying the implementation of Case Management in Germany. More precisely, in our study we understood Case Management as a process that is applicable to all settings, a perspective that enables us to neglect the specific contexts of some Case Management interventions. We relate the implementation of Case Management to the concepts of Variation Management, which provides insights on identifying variation in demand within operations. We further relate to Lean Thinking, which offers a guideline for the implementation of efficient processes.

Due to the fact that the area of obstacles of further implementing Case Management has been largely neglected by empiric studies and theory alike, we felt the need to engage in an exploratory study with a wide range of stakeholder.

1.2 Purpose

Keeping in mind that Case Management has not yet fulfilled its potential in Germany, and assuming that one can and should exploit this potential, the overarching purpose of our study is to provide a picture that enables decision makers to understand which obstacles exist to further implementing Case Management. Moreover, our study aims at offering a practical Case Management process model, which is based on Wendt (2005) and Gursansky, Harvey, & Kennedy (2003) and supported and extended by insights from the theoretical concepts of Variation Management and Lean Thinking. We aim to extend the validity and explanatory power of such process model.

Surrounding this practical purpose of our research is the component of studying Case Management from a theoretical perspective of Variation Management and within the field of

Operations Management. Thereby, we open the discussion of whether or not Case Management is a valuable conceptualization of Variation Management and Lean Thinking within health care. Ultimately, this will extend the theoretical knowledge about how the identification and subsequent management of Variation can be conceptualized and which practical issues have to be considered.

1.3 Question

The considerations above lead us to the following research questions for our thesis:

Q1: Which obstacles of further implementing Case Management in Germany are perceived by stakeholders of Case Management in the German health care system?

Q2: Taking an Operations Management perspective, how do such obstacles relate to our theoretical framework of Case Management?

Q3: How do such obstacles affect the generic Case Management process model?

1.4 Clarification of Terms in Use

In this thesis we use the terms Case Management, Case Management program, Case Management intervention, Case Management initiative, and Case Management process interchangeably. All terms refer to something that follows the generic process described by Wendt (2005). Furthermore, we mean the same by referring to obstacles and issues. The use of different terms is rationalized with our aim to create a readable presentation of our study.

1.5 Disposition

Following will be a short outline of the structure and chapters of our thesis.

Chapter 2: Background

This chapter builds the Background to our thesis. This includes an introduction to the German health care system, a country comparison of health care efficiency indicators as well as a comprehensive background to Case Management.

Chapter 3: Literature Review

After having introduced the background to Case Management in Germany, we present our review of empiric research. The review starts with our research approach, continues with the two main streams in Case Management research – (1) Effectiveness and (2) Perception – and closes with a summary of where we perceive our work to be positioned.

Chapter 4: Theoretical Framework

In this chapter we present the development of our theoretical framework. The chapter starts with the discussion of the three different theoretical fields considered before establishing our operational perspective on Case Management. In establishing this view, we firstly outline the broad theoretical field of Operations Management and secondly introduce as well as relate the two key concepts in use, Variation Management and Lean thinking.

Chapter 5: Methodology

In this chapter we present the methodology of the research at hand, which was applied on the standards and beliefs of the interpretivist paradigm.

Chapter 6: Empirics

In this chapter we display the empiric results of our exploratory study. In order to ease the understanding, we will first give a brief introduction about how we structure this section and then go over into presenting the results. When summarizing the empiric findings in the end of this chapter, we will be able to answer the first of our three research questions.

Chapter 7: Analysis

In this chapter we present the theoretical analysis of our empirical results. We build the bridge between the previously identified obstacles to our theoretical framework and later on to the generic Case Management process. By relating practice to theory we can explain two areas of inquiry: (1) the relation of obstacles to the conceptualization of Case Management from the Operations Management perspective and (2) the effects on the generic Case Management process. Hence, we provide the answer to our second and third research question.

Chapter 8: Discussion

In this chapter we discuss our findings in the light of the three research questions posed. We structure our discussion along the expectancy, the explanatory power and the generalizability of the findings. Before starting off, we will reiterate our research problem as well as the three research questions.

Chapter 9: Conclusion

In this last chapter we recap how our study has evolved from the indication that further implementing Case Management in Germany is constrained, to not only the identification of perceived obstacles but also the analysis how these relate to the conceptual models proposed.

2 Background

This chapter builds the Background to our thesis. This includes an introduction to the German health care system, a country comparison of health care efficiency indicators as well as a comprehensive background to Case Management.

2.1 Introduction to the German Health Care System

Established in the second half of the 19th century, the German system is considered to be the first universal health care system (Obermann, Müller, Hans-Heiko, Schmidt, & Glazinski, 2013), meaning all citizens can "obtain health services without suffering financial hardship" (WHO, 2013). With the implementation of health insurance in 1883, Germany also became the first country in the Western world with a public health insurance system (Bump, 2010).

Since 2009, it is mandatory for all German citizens and permanent residents to have a health insurance (Thomson, Osborn, Squires, & Reed, 2012). There are two ways health insurance is provided.

One the one hand, there is the group of statutory health insurances (SHI) called *Gesetzliche Krankenversicherung,* which insures roughly 85% of the population. On the other hand there is the group of private health insurances (PHI) called *Private Krankenversicherung* which covers roughly 10% of the population. The remaining 5% (e.g. soldiers or policemen) are insured through special health regulations for specific occupational groups (BMG: Federal Ministry of Health, 2013a).

Generally speaking, all individuals (employed citizens, pensioners etc.) earning less than 4,237.50 €per month or 50,850.00 €per year are mandatorily insured via the statutory health insurances, including free of charge insurance for their nonearning spouses and children. Individuals with gross salaries above these threshold values as well as self-employed and civil servants can choose between remaining in the publicly financed SHI scheme on a voluntary basis or to purchase the private health insurances scheme – which 25 percent do (Thomson et al., 2012). Following will be a more detailed description of the characteristics of both the SHIs and the PHIs.

2.2 Health Insurances

In this part, both the Statutory Health Insurance (SHI) and the Private Health Insurance (PHI) will be described in more detail.

2.2.1 Statutory Health Insurance

The aforementioned group of statutory health insurances consists of 134 insurances as of July 2013 (see figure 1). A number that has continuously declined during the last years from more than 1000 insurances in 1994 to 134 as of July 2013 (BMG: Federal Ministry of Health, 2013b).

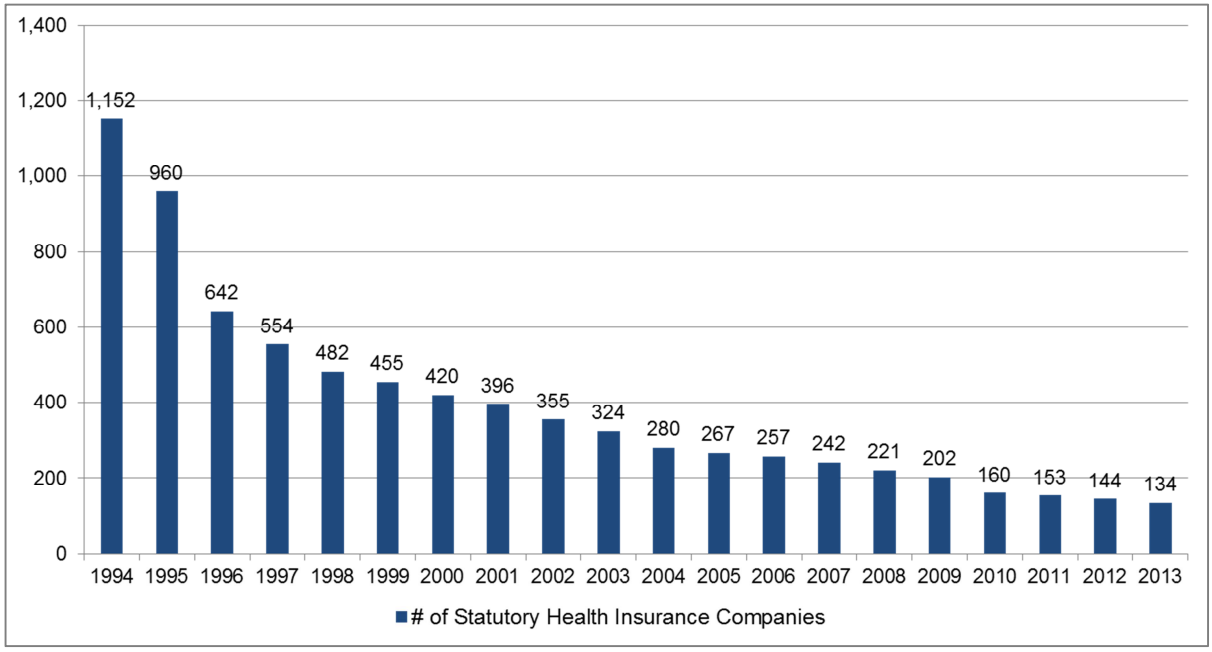


Figure 1: Decline of Statutory Health Insurances from 1994 - 2013

All SHIs are legally obliged to insure any applicant, regardless of their risk or age. Insurant have access to medical services that are included in the SHI coverage – which is defined in the German social law. The medical services encompass in-patient care, physician services, rehabilitation, mental health care, prescription drugs, vaccinations, dental care, palliative care and sick-leave compensation, preventive services (Lisac, Reimers, Henke, & Schlette, 2010). Insurance contributions to the SHI are paid predominantly via payroll taxes, which are set by law at 15.5 percent of the patients' gross wage. This amount is split between employer (7.3 percent) and employee (8.2 percent) (BMG: Federal Ministry of Health, 2013b).

Since January 2009 the SHIs are financed through the Health Care Fund *(Gesundheitsfonds)*. This Fund collects the insurance contributions from the employers, the employees as well as general tax revenue and transfers the money to SHIs on a basic flat rate per insurant plus a risk adjustment bonus. This bonus is paid for insurants who fulfill certain criteria regarding age, sex, and morbidity, i.e. the medical condition (Lisac et al., 2010). Hereby, 80 selected disease categories are considered based upon the anonymized data from in-patient and out-patient care.

This risk-adjusted scheme was considered necessary, because all SHIs are legally obliged to take on any applicant. Thus, a SHI with a "riskier" (e.g. older and/or "sicker") customer base will be compensated with a larger share from the Health Care Fund compared to a SHI with "less risky" patients.

In case a SHI is not able to cover its expenditures with the amount received from the Health Care Fund, it has to charge an additional premium *(Zusatzbeitrag)* from its insurants. Vice versa, SHIs with excess money can pay out a dividend to their insurants. Figure 2 summarizes the key actors around the Health Care Fund as well as its main functionalities.

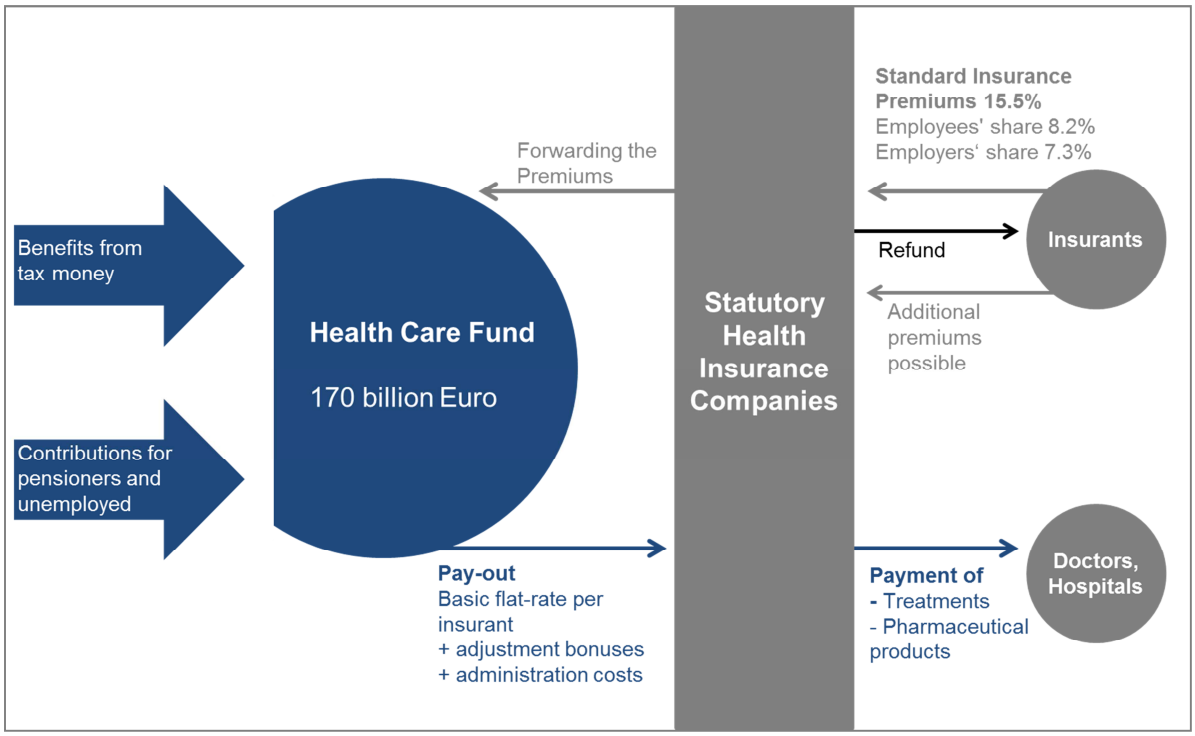


Figure 2: Functionality of the Health Care Fund

2.2.2 Private Health Insurance

The group of private health insurances is made up of 51 private insurance providers (as of June 2013), which insure a total number of roughly 9 million people (Association of PHI, n.d.).

Just like patients insured with the SHI, these 9 million have access to all medical services. Moreover, being privately insured comes with benefits such as the right to be treated by the chief physician, single rooms in hospitals etc.

All people insured with a PHI pay a risk-related contribution. The risk is assessed only at time of entry into the insurance and the contracts are based on a lifetime underwriting. Family members have their own, separate contributions (Thomson et al., 2012). In order to mitigate

the increase in contributions with age, PHIs are legally required to set aside savings (old-age provisions) from when the insurant was young in order to have additional funds when the insurant is older. With the introduction of the so-called portability clause in 2009 such aging reserves have been transferable in case the insurant decides to seek insurance with another PHI (Lisac et al., 2010).

2.3 Care Providers

Health care provisioning can be separated in out-patient and in-patient care. (Merriam-Webster, 2013) defines out-patient care as "for a patient who goes to a physician's office or hospital for treatment but who does not spend the night there" and in-patient care as "for a hospital patient who stays for one or more nights in a hospital for treatment."

2.3.1 Out-Patient Care

Out-patient care physicians who treat patients insured with the SHIs are required to be registered with the so-called Association of Statutory Health Insurance Physicians *(Kassenärztliche Vereinigung)* in their region (German Medical Association, n.d.).

The Association of Statutory Health Insurance Physicians, among other things, functions as the intermediary between the SHIs and the physicians; it negotiates a fixed budget for all physicians and distributes it among all physicians based on a remuneration distribution scale.

The statutory health insurance is no longer involved after a budget has been negotiated and has no regulatory power of the care services provided. Also the patient is not involved and costs are not transparent to the patient because the compensation takes place only between the SHI and the Association of Statutory Health Insurance Physicians (BMG: Federal Ministry of Health, 2013b).

Out-patient care physicians who treat patients insured with the PHIs are not required to be registered with any association. Compensation works as follows: The physician sends the invoice to the patient. The patient is obliged to pay the invoice directly to the treating physician but also submits the invoice to his/her PHI for refunding.

2.3.2 In-Patient Care

In-patient care is taking place in one of the 2,017 hospitals (as of 2012) which can be categorized according to ownership (Statistisches Bundesamt, 2013):

- **Public hospitals**: managed by local authorities, towns and the federal states *(Länder)*

- **Voluntary, non-profit hospitals**: run by churches or non-profit organizations such as the German Red Cross
- **Private hospitals**: run as free commercial companies

The compensation of care services in hospitals works as follows: Hospitals are compensated per case with diagnosis-related-groups-budgeting (DRG), meaning that the average costs for a diagnosis is covered by the health insurance, both statutory and private health insurances.

The intention of those DRGs is to stop unnecessary treatments and lengthy hospital stays, to reimburse a hospital fairly and to foster specialization instead of generalization among hospitals, which can increase both quality and efficiency. However, hospitals may intentionally diagnose cases into more cost-intensive groups and thus receive higher reimbursements than needed. Eventually, the classification of cases is complex, and methodologies to correctly account for all capital and overhead costs into specific DRG rates may not always result in appropriate budgets (CESifo Dice Report, 2010).

2.4 Health Care Expenditure

The German health care system fulfills high standards (Heinemann, Baas, Peterseim, Kurth, & Ernst, 2008), but is also very expensive. With total health expenditure of 11.6% of the GDP in 2010, Germany ranks among the three most expensive health care systems in the EU. Furthermore, with 3,337 EUR in 2010 it was one of the five most expensive health care systems in terms of health expenditure per capita (OECD, 2012).

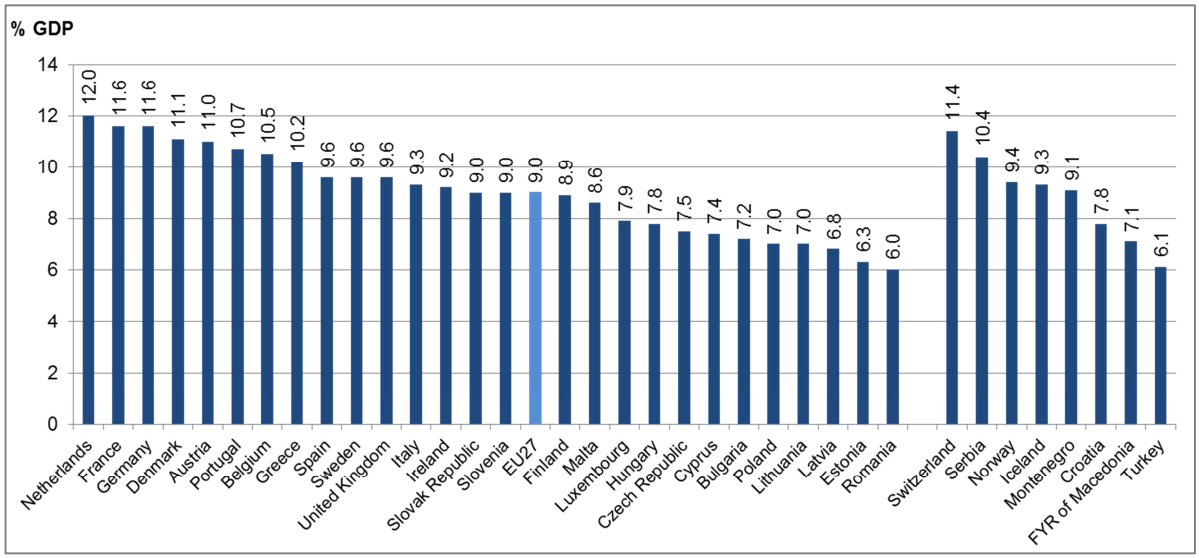


Figure 3: Total Health Expenditure (excl. investments) as a share of GDP, 2010 (OECD, 2012)

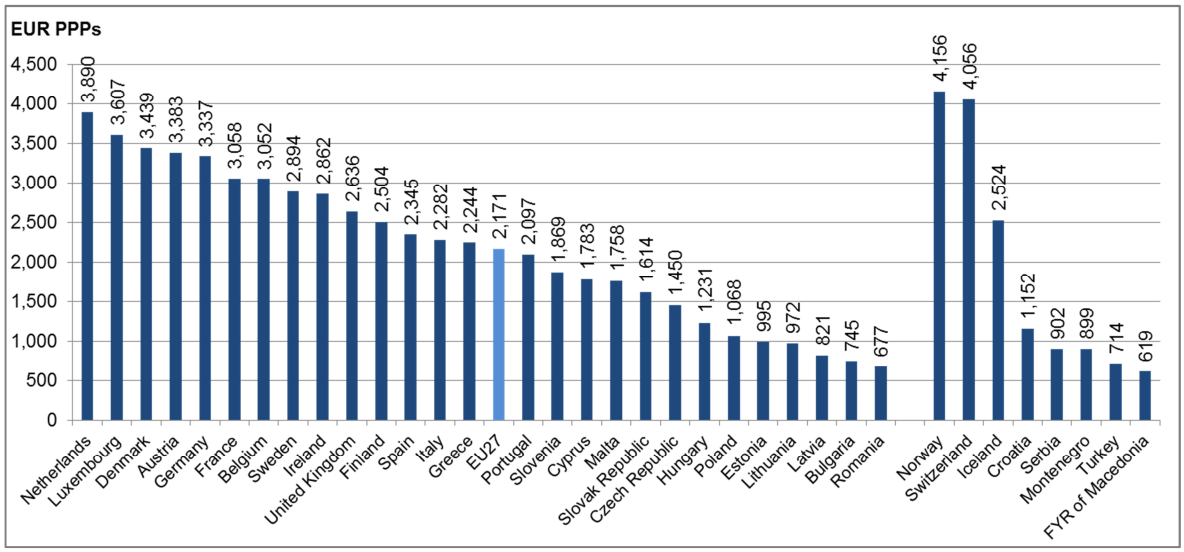


Figure 4: Health Expenditure per Capita, 2010 (OECD, 2012)

2.5 Cost Drivers

Within the previously described total health care expenditures in Germany, one can identify cost drivers by analyzing the distribution of care consumption among functions, patients or diagnosis (i.e. to what extent consumption, measured in costs, is spread equally).

We know that especially four diagnosis categories (see table 1) account for more than half of the health care expenditure in Germany. These four diagnosis categories traditionally entail

	2006 ['000 EUR]	2008 ['000 EUR]	2008 [%]
All diagnosis	**236,524**	**254,280**	
A00-T98 All Diseases	**230,071**	**246,149**	**100.00%**
I00-I99 Diseases of the circulatory system	35,410	36,973	15.02%
K00-K93 Diseases of the digestive system	32,604	34,814	14.14%
F00-F99 Mental and behavioural disorders	26,753	28,654	11.64%
M00-M99 Diseases of the musculoskeletal system and connective tissue	26,648	28,545	11.60%
C00-D48 Neoplasms	17,134	18,078	7.34%
E00-E90 Endocrine, nutritional and metabolic diseases	12,799	13,709	5.57%
J00-J99 Diseases of the respiratory system	12,051	13,189	5.36%
R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	11,217	13,134	5.34%
S00-T98 Injury, poisoning and certain other consequences of external causes	11,512	12,581	5.11%
G00-G99 Diseases of the nervous system	11,485	12,512	5.08%
N00-N99 Diseases of the genitourinary system	8,777	8,981	3.65%
Z00-Z99 Factors influencing health status and contact with health services	6,453	8,131	3.30%
H00-H59 Diseases of the eye and adnexa	6,509	6,841	2.78%
A00-B99 Certain infectious and parasitic diseases	4,045	4,462	1.81%
L00-L99 Diseases of the skin and subcutaneous tissue	3,703	3,957	1.61%
O00-O99 Pregnancy, childbirth and the puerperium	3,079	3,044	1.24%
H60-H95 Diseases of the ear and mastoid process	2,525	2,560	1.04%
Q00-Q99 Congenital malformations, deformations and chromosomal abnormalities	1,466	1,658	0.67%
D50-D90 Diseases of the blood and blood-forming organs disorders involving the immune mechanism	1,292	1,340	0.54%
P00-P96 Certain conditions originating in the perinatal period	1,061	1,116	0.45%

diseases, which are chronic in nature.

However, knowing about the most cost intensive disease categories does not follow in knowing the exact cost distribution among individual patients.

Such statistics about the exact distribution of health care expenditures in Germany are not available, but statistics from other countries enable us to get a fair picture about the situation in the Germany health care system and we further make the assumption that it is similar. In the U.S. in 2008, 1% of the population accounted for 20.2% of total health care expenditures, and the bottom 50% of the expenditures accounted for only 3.1% of the care expenditures (Cohen, Yu, Machlin, & Chevan, 2011). A similar observation can be made from the Swedish health care market, were statistics suggest that, 1% of the population accounted for 30% of the in-patient and out-patient care expenditures in 2010 (Health Navigator, 2012).

2.6 Health Care Efficiency Indicators

Looking at common indicators for assessing the efficiency of health care systems and comparing them, it becomes apparent that the German health care system is not very efficient. Germany is far above average in terms of hospital discharges, average length of stay in hospitals, number of hospital beds, and number of doctors' consultation. The related numbers suggest that both the amount of care resources provided and the care expenditure are higher than economically and medically necessary. The following four common indicators will be presented in detail:

- Number of hospital discharges
- Hospital beds per 1000 inhabitants
- Average length of stay
- Number of doctor's consultations

2.6.1 Number of Hospital Discharges

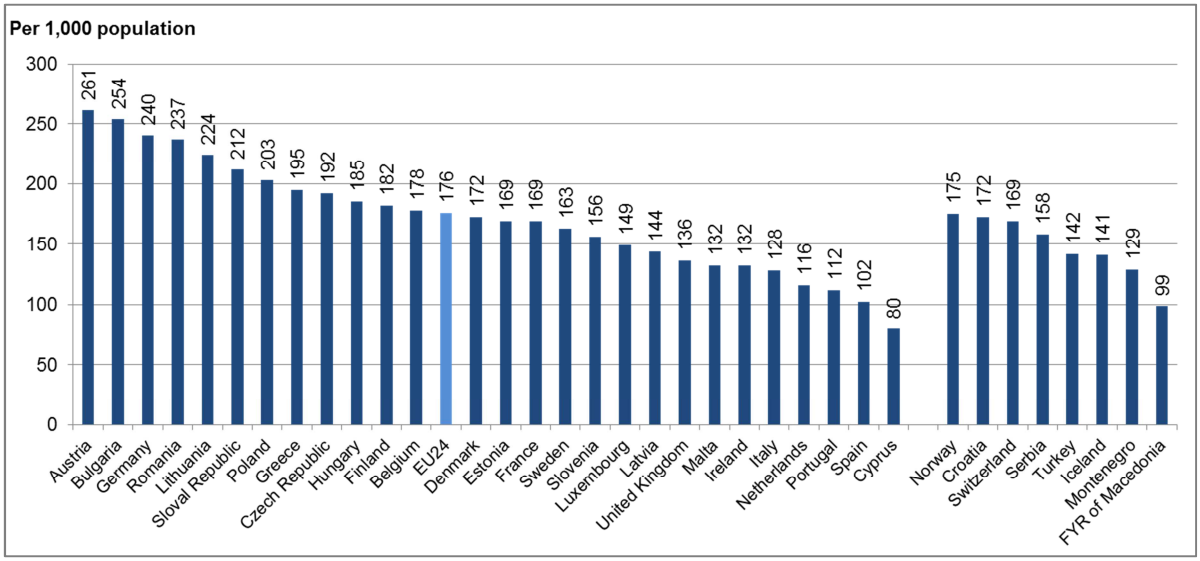


Figure 5: Hospital Discharges, 2010 (OECD, 2012)

The first indicator is the number of hospital discharges per 1000 inhabitants, where Germany arrived on the third highest place with 240 discharges in 2010, exceeding the EU24 average of 176 by far (OECD, 2012).

2.6.2 Number of Hospital Beds

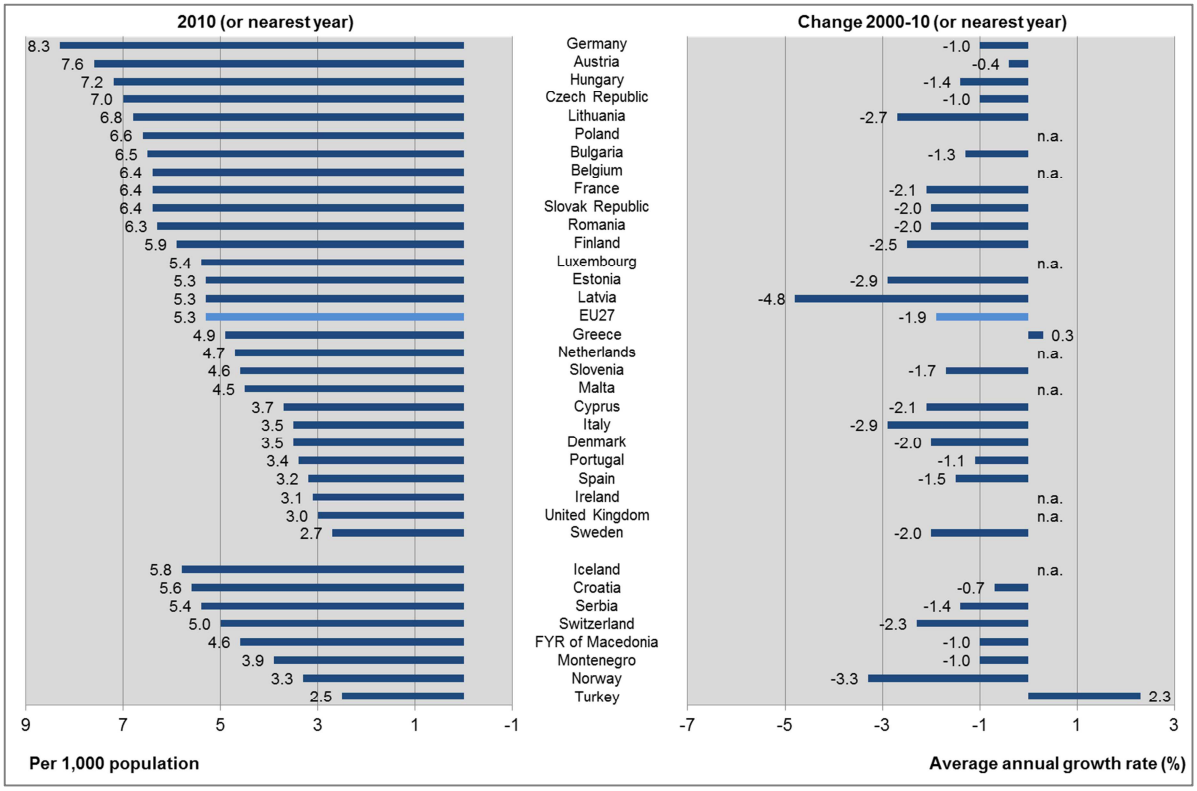


Figure 6: Hospital Beds per 1,000 Population & Change 2000 and 2010 (OECD, 2012)

The second indicator is the number of hospital beds per 1000 inhabitants. Here, Germany ranks top among all countries with 8.3 beds per 1000 inhabitants, while the EU27 average lies at 5.3 beds, and Sweden sets the minimum value with 2.7 beds (OECD, 2012). All figures represent the year 2010.

2.6.3 Average Length of Stay

The third indicator is the average length of stay in hospitals for all causes, which was remarkably high in Germany in 2010 with an average length of stay in hospitals of 9.5 days. In comparison, the EU25 average was 6.9 days and the countries with the shortest stays were Denmark 4.6 days, Hungary 5.1 days, and Sweden 5.7 days (OECD, 2012).

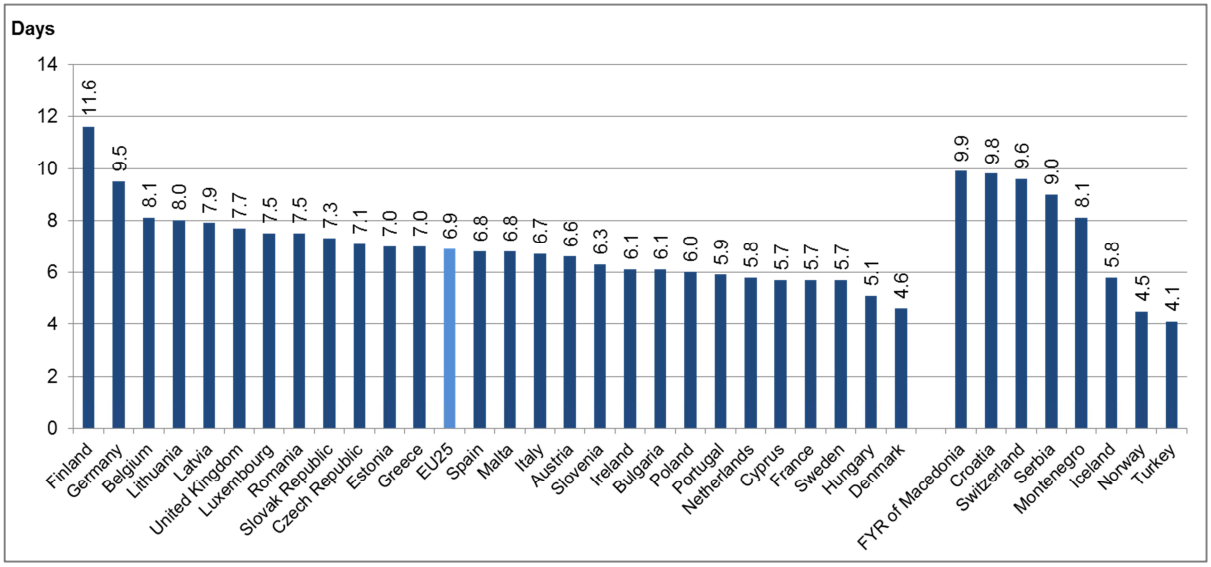


Figure 7: Average length of stay in hospitals for all causes, 2010 (OECD, 2012)

2.6.4 Number of Doctors' Consultation per Capita

The forth indicator is the number of doctors' consultations per capita (i.e. the number of contacts with physicians). Among all OECD countries, Germany has one of the highest numbers of doctors' consultations per person per year (8.9) in the OECD statistics. In comparison, the EU24 average is 6.3 consultations per person per year, and countries with the lowest value are Malta, Sweden, and Cyprus with 2.9, 2.9 and 2.1 doctors' consultations respectively (OECD, 2012).

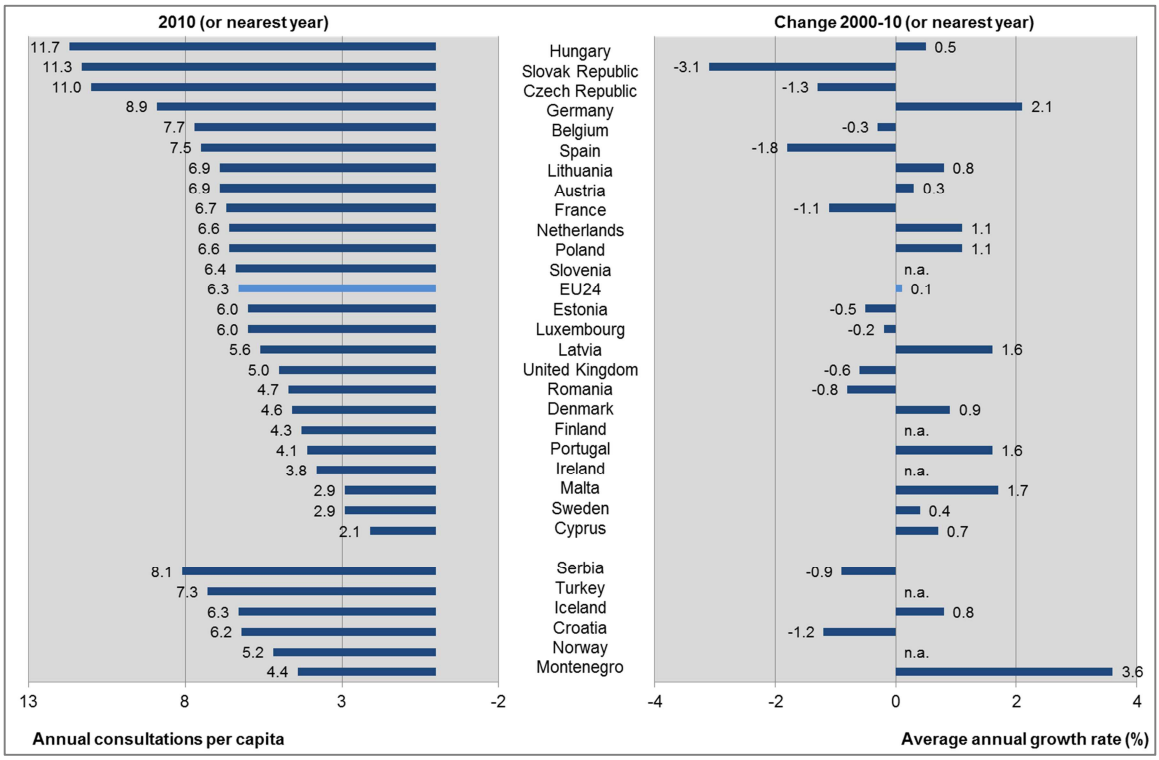


Figure 8: Doctors consultations per capita, 2010 & Change 2000 and 2010 (OECD, 2012)

2.7 Demographic Development in Germany

In addition to having a system that is performing inefficiently, the demographic development in Germany will further foster the need for increased efficiency in the health care sector. Especially, the change in age distribution is of critical importance for the health care sector.

Year	Population in 1000 inhabitants			
	Total	0 to 19 years	20 to 66 years	67 years and older
2009	81,735	15,324	51,370	15,039
2010	81,545	15,017	51,294	15,236
2020	79,914	13,624	49,723	16,567
2030	77,350	12,927	44,771	19,652
2040	73,829	11,791	40,025	22,013
2050	69,412	10,701	37,562	21,149
2060	64,651	10,085	34,228	20,338

Figure 9: Population Development in three Age Groups, Germany 2009-2060

As figure 9 shows, there will be fewer people within the population of working age and a growing number of people in the category of the retired population in 2060. The German population is expected to age relatively quickly due to its high life expectancy and its low birth rate (Economist Intelligence Unit, 2013). This shift in overall age distribution will heavily impact the working age population – the group primarily responsible for the GDP – with fewer people in that category who have to pay for an over proportional part of the statutory health insurance as well as nursing care insurance (Beske, 2011). This change in age distribution can best be measured through the so-called age quotient, which simply measures the relation between the portion of the population in working age against the portion of the population outside working age. If one would measure the relation between the employed versus the unemployed plus non-working age population the ratio today is 3:1 while by 2060 it will only be 1:1 (Beske, 2011).

2.8 Current Debates

The entirety of inefficiencies, high expenditures, unequally distributed care consumption, and the demographic development have strong implications for the health care sector.

In the past two decades several reforms and smaller changes were implemented in order to improve the German health care system. The focus of these adaptions was on increasing competition and quality of health care while simultaneously reducing costs and utilizing technological advancements (Scheel, Thiry, Schmidt-Rhode, & Berenbeck, 2011). It is beyond the scope of our thesis to go into detail about the reforms in the German health care system. However, during the past decades, several institutions in the German health care system tried to implement interventions to increase the cost efficiency while simultaneously remaining or even raising the quality of health care services. One of these interventions has been Case Management.

2.9 Case Management

Case Management originates from the U.S. social work and public health nursing in the early 1990s (Roggenkamp, White, & Bazzoli, 2005) and is regarded – by German researchers – as an intervention aiming to improve the coordination of patients' care process (Löcherbach et al., 2002).

Hereby, the coordinating tasks are performed by "an appointed individual, [i.e. a Case Manager], or a small team who may or may not be responsible for the direct provision of care" whose objective it is to guide the patient "in the most efficient, effective, and acceptable way" (Ouwens et al., 2005). It becomes apparent that Case Management is explicitly understood as proactive coordination, unlike most care provisioning that is reactive or incident-based in nature (Norris et al., 2002).

Furthermore, Case Management is an individual case-based coordination, while for example other interventions, e.g. Disease Management, are population based, meaning that the approach mostly bases on standardized guidelines for a certain disease population, e.g. diabetes (Norris et al., 2002). However, both interventions are often complementing or overlapping (see Norris et al., (2002) for a comprehensive review of both disease and case management interventions, including the differentiating factors between the two).

2.9.1 Core Elements of the Case Management Process

Several organizations in Germany are in a position of having an interest in providing Case Management, e.g. medical specialists, hospitals as well as cost bearers of the health care system such as SHIs and PHIs (Löcherbach, 2003). This has resulted in various manifestations of Case Management in Germany (Wendt, 2005). Nevertheless, they are all

based on the same core process (Wendt, 2005). In line with Wendt (2005), and considering that we study Case Management from a process perspective, we use the term Case Management interchangeably for all interventions that are based on the core elements described in the following, regardless of their diverse providers and individual characteristics.

In recognized literature, the core elements of Case Management are defined from the providers' perspective and can be summarized as (1) outreach (screening and intake), (2) assessment, (3) planning, (4) implementation/monitoring, (5) evaluation, and (6) accountability (Gursansky et al., 2003; Wendt, 2001, 2005). Hereby, only processes that integrate and connect all elements should be defined as Case Management (Wendt, 2001). Other literature sometimes excludes or rephrases single parts, but follows the same cycle, e.g. Norris et al. (2002)'s process of "(1) identification of eligible patients, (2) assessment, (3) development of an individual care plan, (4) implementation of the care plan, and (5) monitoring of outcomes."

Following, will be a description of the characteristics of each element supported by the exemplified situation of our sample patient, Mr. Fox.

Element 1: Outreach

The element *outreach* (screening and intake) consists of procedures aiming at identifying and contacting eligible patients among the total of all patients in the German health care system (Wendt, 2005). For instance, Mr. Fox was identified by the criteria multi-morbidity and consequently contacted if he wants to enroll in the Case Management Program.

Element 2: Assessment

The element *assessment* assumes that the patients who were identified as eligible in the *outreach* element are now part of the Case Management process. Then, the Case Manager analyzes and clarifies the patient's problems, as well as asks for the individual needs (Wendt, 2005). For instance, Mr. Fox and the Case Manager meet or talk on the phone and the Case Manager tries to gain a holistic understanding of Mr. Fox's medical and social situation.

Element 3: Planning

The element *planning* contains the joint planning and agreement between the patient and the Case Manager about goals as well as strategies and means how to achieve these goals (Wendt, 2005). For instance, Mr. Fox's was in the hospital and the Case Manager and Mr. Fox agree on a certain rehabilitation center, or Mr. Fox wants to remain stable in the next months and he

and his Case Manager thus agree that Mr. Fox should see a physician every three months and talk to his Case Manager on a weekly basis.

Element 4: Implementation/Monitoring

The element *implementation/monitoring* consists of the operationalization and control of what has previously been agreed on (Wendt, 2005). For instance, Mr. Fox's Case Manager checks if Mr. Fox went to see the physician.

Element 5: Evaluation

The element *evaluation* comprises that all measurements taken should be evaluated on their outcomes. Potentially, a re-assessment of needs also takes place (Wendt, 2005). For instance, Mr. Fox and his Case Manager check if they have reached their goals and what could be done differently.

Element 6: Accountability / Re-Assessment

The element *accountability* is solely centered around the Case Manager or the institution providing Case Management, since everything that has been done during a Case Management intervention shall be documented and made transparent (Wendt, 2005).

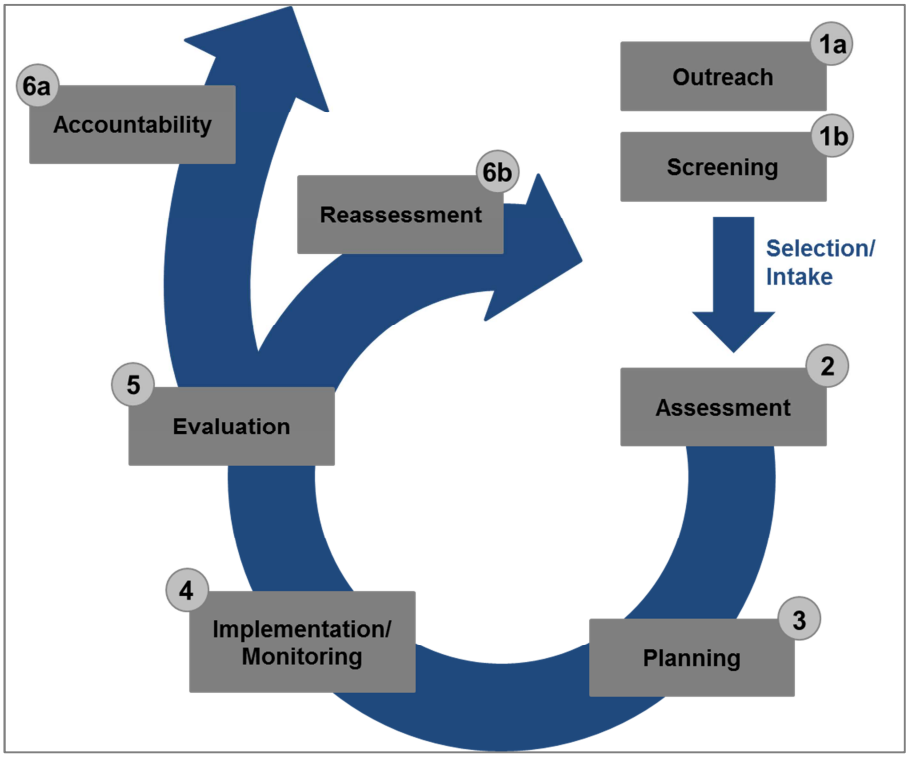


Figure 10: Case Management Process Model (adapted from Wendt, 2005)

2.9.2 Eligible Patients for Case Management

The answer to the question what kind of patients fall into the category of eligible patients is naturally defined by content and form of a Case Management program, which both varies with the provider and the system (Ouwens et al., 2005). Recent evaluation studies about Case Management interventions show that patients identified as eligible and enrolled in the program were predominantly chronic patients, but also elderly or disabled patients, or patients with psychiatric diseases. These patients share the common criteria of high consumption of care and complex needs that require accessing care from different care sectors on a frequent basis, i.e. in-patient care, out-patient care (Jochen Gensichen et al., 2012; Hébert, Tourigny, & Raîche, 2008; Reinius et al., 2012; Sheaff et al., 2009). See Coleman (2003) for a more detailed description of the complex care needs and problems with transitional care.

2.9.3 Stakeholders of Case Management

For the same reason as pointed out in the previous section, does the stakeholder map vary with the individual Case Management program. In addition, Case Management programs in Germany are often organized by a group of health insurances, Case Management service firms or physicians/association of physicians, and research institutes. For this reason, it is not leading to present an exact stakeholder map but to define the stakeholders on a generic level. The stakeholders of Case Management, i.e. agents related to and relevant for Case Management, are:

- **Governmental bodies** of all levels, as they define the legal framework of the health care sector
- **Hospitals** in their function of investing in and providing a Case Management to their patients that is predominantly organized and executed in-house
- **Insurances** in their function of either
    - Investing in and providing a Case Management program that is fully organized and executed in-house
    - Investing in and providing a Case Management program for which the execution is outsourced to a Case Management service firm or physicians/association of physicians
- **Case Management service firms** in their function of providing the execution of the Case Management process to interested companies, e.g. insurances
- **Physicians** of both in-patient and out-patient care

  - In their function of collaborating with Case Management process
  - In their function of being contracted by a Case Management provider and executing a Case Management process
- **Case Managers** in their function of being the one performing the process suggested by Wendt (2005) independent from where there are employed (e.g. with an insurance, hospital, Case Management service firm)
- **Research Institutes/University departments** in their function of complementing a Case Management intervention with a study, often focused on the effectiveness that has to be evaluated and made accountable (Wendt, 2005)

2.9.4 Potential of Case Management

Although a comprehensive evaluation of the spread and scale of Case Management does not exist (Löcherbach, 2003), several factors indicate that Case Management in Germany still has a lot of potential, regardless of who owns or executes the intervention. We base this indication on the pre-study interviews with experts in the field. These pre-study interviewees not only pointed out that Case Management has been successfully implemented in some health care institutions, but also that the potential is far from being fulfilled. They further supported our assumption that there are obstacles hindering the full realization of Case Management.

3 Literature Review

After having introduced the background to Case Management in Germany, we now present our review of empiric research. The review starts with our research approach, continues with the two main streams in Case Management research – (1) quantitative evaluation of the effectiveness of Case Management and (2) qualitative studies about the perception of Case Management – and closes with a summary of where in the literature we perceive our work to be positioned.

3.1 Research Approach

The search for literature took place both in physical libraries in Sweden and Germany and electronic databases. The databases in use were Scopus, which includes a high number of articles from the medical field, Business Source Premier as well as Google Scholar.

All databases were searched with single and multiple key words. From all articles retrieved, we filtered out most articles that have not been peer-reviewed in order to improve the quality of our review. We started off searching with the narrowest scope of Germany and subsequently opened the tunnel for research worldwide.

3.2 Evaluation of the Case Management's Effectiveness

The first of the two main research streams in Case Management Research has focused on quantitative studies with effectiveness being the central theme. Different Case Management interventions were evaluated in several studies, both in Germany (Jochen Gensichen et al., 2011, 2012; Kainzinger, Raible, Pietrek, Müller-Nordhorn, & Willich, 2009; Kielblock et al., 2007) and outside of Germany (Okin, Boccellari, & Azocar, 2000; Phillips, Brophy, Weiland, Chenhall, & Dent, 2006; D. Pope, Fernandes, Bouthillette, & Etherington, 2000; Reinius et al., 2012; Rosen & Teesson, 2001; Shumway, Boccellari, O'Brien, & Okin, 2008; Spillane & Lumb, 1997) to only name a small collection. In the following, the results will be reviewed in detail.

3.2.1 Number of both Hospital Discharges and Doctor's Consultations

Case Management has shown to reduce the total number of out-patient visits (Reinius et al., 2012) and the number of ED visits by frequent users (Okin et al., 2000; D. Pope et al., 2000;

Reinius et al., 2012). The potential impact may be a decrease of the median number of ED visits from 15 to 9 (Okin et al., 2000), because greater attention was given to the unique needs of frequent users. Those frequent users have higher rates of hospitalization, more ED visits, and lower satisfaction than other patients because of their socioeconomic distress, poor mental and physical health (Sun, Burstin, & Brennan, 2003).

Challenging these findings, Spillane & Lumb (1997) found no significant decrease of ED utilization by frequent users, while Phillips et al. (2006) report increased ET utilization. When looking at the methodology, the contradicting results may be a consequence of how these studies were designed. Both Okin et al. (2000) and Pope et al. (2000) designed a prospective study, meaning they required consent and used patients as their own historical control group. Phillips et al. (2006) designed a retrospective analysis and claims that studies using patients as their own historical control group are limited by what happens to the patients over time: Hospital utilization may have changed not as a result of Case Management, but because of other factors. Although reasonable, retrospective analyses have found positive effects of Case Management, which indicates that the study design is not the determining factor (Reinius et al., 2012).

3.2.2 Average Length of Stay

Kainzinger et al. (2009) showed that a 'length-of-stay-oriented' Case Management in Germany decreased unnecessary extensions of the length of stay in hospitals (5.69 days instead of 7.34 days), perhaps due to increased transparency of the treatment process and the integrated procedure facilitated by Case Management. In addition, Kainzinger et al. (2009) found no significant correlation between the shortened length of stay and an increased re-admission rate, which one could suspect. Similarly, Reinius et al. (2012) identified a positive correlation between Case Management and patients' shortened length of stay in hospitals.

3.2.3 Health Care Expenditure

Health care costs were often positively affected by Case Management (Okin et al., 2000; Reinius et al., 2012; Shumway et al., 2008; Wassmer, Winward, & Derlet, 2008). Hereby, one has to distinguish between costs per intervention group and total health care costs. Shumway et al. (2008) found that total costs remained the same if the investment in Case Management was considered, yet stressed that the situation was more cost-effective since clinical and social outcomes were improved without additional overall costs.

3.2.4 Qualitative Factors

Cost decreases are mostly not assumed to be achievable with maintaining or improving quality. However, Reinius et al. (2012) identified improved self-assessed health status and no changes in mortality. Related did Gensichen et al. (2011) find patients' ability to engage in self-management to be improved.

3.3 Perception of Case Management

The second of the two main research streams in relevant literature about Case Management contains only a small number of qualitative studies dealing with the different stakeholder's perception of Case Management.

3.3.1 Doctors' Perception

In their study on practice-centered Case Management, Peters-Klimm et al. (2009) found that general practitioners perceived a doctor's assistant engaging in Case Management instead of working in the practice an obstacle. They furthermore found, that the lack of reimbursement of Case Management Services harms Case Management implementation on a large scale and hereby support the work of Norris et al. (2002), who identified financial resources as crucial. However, the perceived easiness might be program-specific, as other studies have identified that "developing new delivery systems and establishing effective provider relationships" was challenging (Kodner & Kyriacou, 2000). In addition, Norris et al. (2002) mentioned that Case Management requires a paradigm change from reactive to proactive care. They further argued that care providers perceived Case Management as time-consuming and useless for the patient.

It depends on the leadership's support, the available financial resources, marketing budgets, as well as the resources and skills to develop guidelines for the effective Case Management intervention (Kodner & Kyriacou, 2000).

3.3.2 Case Managers' Perception

From the perspective of the Case Manager, the support of the practice team, the general practitioner's feedback, and the mandatory participation is a facilitator of implementing Case Management in general practices. "Poor motivation" as well as a negative attitude towards Case Management among few of the patients is considered to be an obstacle (Olbort et al., 2009). Correspondingly, Steinman et al. (2012) relate low rates of adoption and

implementation in evidence-based programs to the extensive list of exclusion criteria "more about screening out than screening in", and to screening mechanisms through questionnaires. Those questionnaires were perceived by Case Managers as inaccurately accounting for cultural differences, unspecified symptoms, and untruthful clients. Kodner & Kyriacou, (2000) claim that enrolments are slower than anticipated, because patients are unwilling to change primary care physicians. This would be required upon enrolling the Case Management process and they did not value a new program in general.

3.3.3 Patient's Perception

The patient perceived primary care-based Case Management as "mechanical" and not "empathically" (Gensichen et al., 2012). Important is the regular contact with the Case Manager as well as the perceived quality (the degree of personal contact, standardization, and brevity). Furthermore "trust in the provider" is a precondition for Case Management and a general limitation of Case Management from the patient's perspective (Jochen Gensichen et al., 2012).

3.3.4 Other Findings

Roggenkamp et al. (2005) found that the adoption of Case Management is little influenced by rational assumptions about the cost-effectiveness of Case Management, but that companies under higher economic pressure initiate Case Management as a cost control strategy. They also tested the impact of legitimizing behavior, and found system membership and Case Management penetration positively affecting adoption. This means, if one company is initiating Case Management others would do the same.

3.4 Summary and Thesis' Positioning in Literature

Coming from the practical observation that the total rate of enrolment in different Case Management programs in Germany is low compared to the number of eligible patients, we presumed that obstacles are preventing it.

We aimed to find reasons by reviewing Case Management-related literature. Hereby, Case Management showed to be effective in improving efficiency and quality, although Ouwens, Wollersheim, Hermens, Hulscher, & Grol (2005) and others consider that the evaluated programs widely vary in definition and design and that more research is needed in order to understand the cause-and-effect-relationship precisely.

In none of the reviewed literature a low participation rate or small scale of programs was systematically addressed, but we were supported in our observation by (Kodner & Kyriacou, 2000; Peters-Klimm et al., 2009; Steinman et al., 2012), who found the current absence of reimbursement a barrier to the implementation of Case Management on a larger scale. Moreover, Norris et al. (2002) argued that identifying patients to participate in interventions is rather difficult. The literature however does not cover the perception of other important stakeholders of Case Management in Germany, e.g. cost bearers such as insurance companies.

We perceive our study to fit well to the existing research on Case Management. Our aim is to extend the attempts to explore stakeholders' perception of Case Management. We want to translate theory into practice, but aim to understand the differing contexts first as (Rabin, Brownson, Kerner, & Glasgow, 2006; Rosenheck, 2001) suggest.

Overall, we found that theory offers a generic Case Management-concept, which illustrates the main process steps, but that has been little refined by practical experiences. Kodner & Kyriacou (2000) point out that there is a "lack of a sound analytic framework" for integrated care, which may likewise apply to Case Management, because Case Management is considered to be a service within integrated care concepts. Kodner & Kyriacou (2000) further stress that a conceptual understanding is crucial for the further development of Case Management and we aim at contributing to Case Management by discovering the obstacles which are currently preventing a further implementation.

By conducting this research we add further knowledge to the comparably small body of literature about the perception of Case Management, especially in comparison to the number of works on effectiveness.

4 Theoretical Framework

In this chapter we present the development of our theoretical framework. The chapter starts with the discussion of the three different theoretical fields considered before establishing our operational perspective on Case Management. In establishing this view, we firstly outline the broad theoretical field of Operations Management and secondly introduce as well as relate the two key concepts in use, Variation Management and Lean thinking. For a better flow of reading, the presentation follows the sequence in which we developed the framework.

4.1 Considered Theories

In developing our theoretical framework, we considered three promising theoretical fields and associated concepts that would fit the setting of a Case Management implementation.

4.1.1 Case Management as Innovation

We considered Case management an innovative concept that is to be implemented in an existing system. Within the theoretical field of Innovation Management, the theory *Diffusion of Innovations* (Rogers, 1995) seemed suitable because it seeks among others to explain why innovations spread or fail. The fact that this established theory has already been applied in the health care context (Greenhalgh, Glenn, Macfarlane, Bate, & Kyriakidou, 2005) further supported the choice. However, given that we are not presuming a specific setup of the Case Management initiative, i.e. not stating who should be the one owning or executing the Case Management program, such theoretical approach is rather limited to our research. This is because the characteristics of how an innovation would be integrated into the German health care system successfully would be very much depending on the precise setup of the Case Management initiative.

4.1.2 Case Management as Change

We assumed that the further implementation of Case Management requires a change of people and the system on several levels. For this perspective change management might be an appropriate theoretical field. Classical change management theories such as Kotter (1996) and also behavioral change theories as suggested by Enguidanos (2001) provide insights on why and how people change. However, when looking deeper into the fit of change management with our research approach towards Case Management, we figured that change management would be the next step to take, i.e. when overcoming the obstacles we are aiming to find.

Thus, it was discarded as the theoretical basis for our thesis. Nonetheless, we consider it a promising direction for future research about Case Management.

4.1.3 Case Management as a Process

The third and eventually chosen approach was developed in the theoretical field of *Operations Management*. We reduced the earlier described Case Management to its abstract components and found ourselves with a process for the ones causing high variation in demand (i.e. the chronic patients). The process starts when the ones causing high variation were identified, and continues with steering them in order to reduce some of their variation, to eliminate waste, and to increase the overall efficiency of the treatment process.

In detail: Earlier to any Case Management intervention for chronic patients like Mr. Fox, one has identified the fact that these patients, the chronic/multi-morbid, have substantially higher variation in demand than other patients; a variation that is difficult to cover with one standardized approach (Coleman, 2003). After the identification of the root causes for variation, Case Management starts as a process aiming to improve the coordination of the patients' care (Löcherbach et al., 2002).

In the theoretical field of Operations Management, such a process is dealt with within the concept of Variation Management. Given the high fit between Variation Management with the setting of a Case Management implementation, this approach was most suitable. Unlike the other theories considered, Variation Management permits to engage in an exploration disregarding a certain type or setup of Case Management. This is because, as earlier mentioned, the core components of Case Management, are alike, regardless of the precise set-up of the Case Management (Wendt, 2005). In addition and unlike the earlier discussed change concept, Variation Management provides the conceptualization and not yet the problem solution. Therefore, using Operations Management as our starting point for a theoretical basis and looking into the area of Variation Management was the most appropriate way to build a theoretical framework

In the following we introduce the levels of our theoretical perspective. To enable a better understanding of our line of thought for building the theoretical framework, we start from Operations Management, narrow the perspective to Variation Management, and complement this with Lean Thinking.

4.2 Operations Management

4.2.1 Introduction to Operation Management

The field of Operations Management has historically studied companies' manufacturing processes for producing and delivering physical goods; research that has resulted in well-known concepts such as TQM which contribute to the understanding of the development, the execution, and the maintenance of effective operations.

Even though operations research has its origins in England in the 1930s (Fuller & Martinec, 2005), it was the Japanese competitiveness that pushed a substantial evolvement of managing operations in terms of quality and productivity. Such changing priorities and paradigms have pushed countries around the world to rethink the ways of dealing with their quality and productivity (Gunasekaran & Ngai, 2012). Most relevant for the field of Operations Management has been the development from mass production to mass customization (Vonderembse, Uppal, Huang, & Dismukes, 2006).

4.2.2 Operation Management in the Service Sector

Operations Management researchers have started extending classic Operations Management theories to the service sector, which is also the result of the continuous macro-level evolution from agriculture to manufacturing to services (Karmarkar & Apte, 2007). Hereby, the growing interest of Operations Management researchers in the field of services has led to an increasing focus on the customer and collaboration (Gunasekaran & Ngai, 2012).

In adapting traditional Operations Management to the context of the service sector, to which health care belongs, some special characteristics are known and have to be considered (Buffa, 1980):

- Service output cannot be inventoried
- Extreme variation in demand in the short-term, which can often not be flattened out
- Service operations are labor intensive
- Location of service delivery is often decided upon the users' location (i.e. patients) leading to decentralized and small operations which cannot take advantage of economies of scale

Adding to this understanding of Operations Management in the service sector is the perspective given by Grönroos (2002). He distinguished between a firm's core services and its supporting services. The firm's core service is the reason for a firm to exist on the market. The firm's supporting services can either be a prerequisite in order to facilitate the actual use

of the core service, or an enhancement that further increases the value of the service. (Case Management can hereby be understood as supporting service that enables care-intensive patients to better use the core service health care system).

The value of a core service process was defined by Grönroos (2002) in three basic elements, which, when translated to the context of health care, constitute the following:

- Accessibility to the health care service
- Interaction with and between the health care organizations
- Patient participation

Finally, the behavioral assumptions that one has to consider when researching in the field of Operations Management are according to 1) people play a minor role, 2) people's actions are determinable, 3) people's actions are also predictable 4) people's actions are independent from other peoples' action 5) unrelated to the product developed 6) free from emotions 7) everything is visible (Boudreau, Hopp, McClain, & Thomas, 2003).

4.3 Variation Management

4.3.1 Introduction to Variation Management

The term variation belongs to the "4 V's" of Operations Management, namely volume, variety, variation, and visibility, of operations and is understood as the level of change in demand over time. It is worth noting that the related term, variability, needs to be distinguished as it describes the number of different products or services made by an operation (Slack, Chambers, & Johnston, 2006). Variation Management deals with the causes of variation within operational processes, their effects, and ways to deal with this variation.

Research within Variation Management institutes that there are several causes that account for the demand being typically not consistent and often high in variation. Variation in demand might be caused by business cycles, one-time events, unexpected changes, seasonal factors, or trends.

Theory further recognized that variation in demand harms the efficiency of operations (Modig & Ahlstrom, 2012). Planning and operating efficient processes depends on knowing demand patterns as good as possible (Parker, Anderson, & Anderson, 2013). In the case of having high and unpredictable variation the possibility to plan and operate according to strategy is

naturally limited. The consequence of such constrained planning might be a mismatch between supply and demand.

4.3.2 Variation Management in Health Care

Previous research has shown that the concept of Variation Management, despite having its origins in manufacturing, can be applied in the health care sector. This is because literature argues that "all processes are random by nature, may they be in manufacturing or health care" (Benneyan & Kaminsky, 1995). Differences among industries are acknowledged, yet the health care sector is not nearly as unique as sometimes thought. Consequently also in health care and its operational processes, the goal is to understand variation and to control it (Benneyan & Kaminsky, 1995).

Regarding the causes of variation in health care, McLaughlin (1996) points towards the distinction between common-cause variation such as different waiting times and the special-cause variation, which "appears as the effect of causes outside the core processes of the work". The latter would include the kind of variation which Case Management is trying to reduce and manage. That is because chronic disease patients and especially multi-morbid patients have a frequent but not regular course of disease, which accounts for high variation in demand (Coleman, 2003).

The importance of Variation Management within the health care sector has been recognized by McLaughlin (1996) who noted that "increasingly, health care industry leaders are recognizing that elimination of unnecessary variation is a necessary, (…) because continuous improvement, rather than mass production, is the key step in the rationalization of what has been a craft industry and the ultimate objective of delivering health care with its inherent variability in a mass customization mode."

McLaughlin (1996) argued that it is important to see variation as given, which should be analyzed and managed instead of focusing on eliminating variation entirely. In this sense Case Management could be a viable process for "special cause" variation that cannot be completely eliminated, because it cannot be standardized. However managing the variation would already improve the situation of such high variation in demand.

Hereby, one approach aiming at analyzing the causes and characteristics of variation in health care demand has been the application of statistical process control (SPC) methods. SPC is the umbrella term for statistical tools that measure the purely quantitative variation in flow, as for example waiting times. Several kinds of SPC methods have been successfully translated into

the health care sector James (2005). In particular, based on the definition of Walley, Silvester, & Steyn (2006), SPC is applied in health care to:

- Monitor changes in demand
- Measure performance over time
- Understand the behavior of processes
- Develop a body of knowledge about systems
- Measure the impact of small-scale change

When looking at the whole Case Management process of identifying and managing variation as well as the function of Case Management to increase efficiency by eliminating waste and reducing variation, it becomes difficult to find applicable Variation Management literature that provides us with insights beyond the identification of Variation.

The majority of existing literature about the application of Variation Management within health care focuses on sources of variation such as the patients' punctuality, waiting time and poor utilization of facility resources of the "average" patient (Salzarulo, Bretthauer, Côté, & Schultz, 2011; Walley et al., 2006). In this context, Variation Management is mostly applied using SPC methods. Hence, most research is quantitative in its implementation of Variation Management (Kucukyazici, Verter, & Mayo, 2011).

Concluding from the above findings about Variation Management, it becomes apparent that the concept of Variation Management can be applied to the first step of Case Management, the identification. To be precise, SPC methods can be used to identify and separate the care-intensive patients, which are eligible for Case Management; thereby reducing variation of the whole population of patients. However, when it comes to the actual process of executing Case Management with and upon the selected patients, concepts from the body of Variation Management literature are too quantitative and specialized for developing a conceptualization of implementing Case Management.

In order to overcome the limitations of such quantitative approach to the implementation of Case Management and to be able to conceptualize the process, we complemented the concept of Variation Management with another theoretical perspective. After considering several options within the frame of Operations Management (e.g. Six Sigma, TQM, Lean etc.) we decided to use the perspective of Lean Thinking. Not only are the goals of lean thinking and Case Management alike, because both of them aim at increasing efficiency and eliminating

waste, but also has Lean Thinking proven valuable applicability on a conceptual level within the health care sector. This will be elaborated below.

4.4 Lean Thinking

4.4.1 Introduction to Lean Thinking

Lean is differently defined and understood, depending on the level of abstraction that is chosen. Among the most abstract definitions one can find lean culture, lean philosophy, or lean value system, while the more concrete definitions focus on methods, tools, and activities. The first group of definitions is widely applicable due to its high level of abstraction, the latter is context-specific and thus difficult to transfer (Modig & Ahlstrom, 2012). Lean can also be understood as a strategy within Operations Management, which aims for efficiency, in particular flow efficiency instead of resource efficiency (Modig & Ahlstrom, 2012). In our study, we decided to take this definition of lean as our basis for further discussion. Hereby, we define flow efficiency as the optimal utilization of time in the process of guiding a so-called flow unit from a certain process start point, e.g. need identification, to a certain process end point, e.g. need satisfaction (Modig & Ahlstrom, 2012).

The roots of lean concepts can be found on the Japanese manufacturing shop floor and got worldwide attention through successful innovations of Toyota Motor Corporation (Hines, Holweg, & Rich, 2004).

4.4.2 Lean Thinking in Health Care

Despite its origins in the manufacturing sector, Womack & Jones (1996) proposed a major role for lean improvement in the service sector and many researchers and practitioners have echoed their call for lean adoption in services (Piercy & Rich, 2009) or (Bowen & Youngdahl, 1998).

The key research area of lean in the service sector has been the handling of patients through the health care system along treatment processes (Jones & Mitchell, 2007; Kollberg, Dahlgaard, & Brehmer, 2007). Hereby it is very often the case that the research is focusing on the normal, ‘average’ patient, for whom the flow can be standardized.

The assumption of most studies that applied lean to the service and especially the health care sector is that patients can be regarded products that are moved through a transformational (in this case treatment) process. Similar to assembling a product, patients enter the procedure, have operational activities performed on them, and finally leave the process. This perspective,

while not without critics, has enabled proven lean tools such as mapping techniques and waste reduction to be used in the health care sector (Seddon, 2005; J.P. Womack & Jones, 2005). Indeed do Young et al. (2004) argue that the most obvious application of lean in health care lies in eliminating any kind of delays, repeated encounters errors and inappropriate procedures. Here, a relation to Case Management is most obvious as the main intention behind Case Management

One acknowledged contribution in the application of lean to the service sector traces back to Womack & Jones (2003). They were the ones elaborating on lean thinking and extending the concept from shop floor techniques to the entire service organization. Hereby, they developed five principles of lean thinking that can be applied to the implementation of service processes. Womack & Jones (2003) argue that after having applied these principles to the implementation of the service process fewer resources will be consumed and the delivered results will be superior. This is because all principles focus holistically on **"**the reduction or elimination of waste (unproductive effort that does not create value for the end customer)" (LaGanga, 2011). In detail these principles are:

(1) Identification of customer value
(2) Management of the value stream
(3) Developing a flow production
(4) Using "pull" techniques
(5) Striving to perfection

Summarized by Staats, Brunner, & Upton (2011) the *(1) customer value* defines the use that a service or product offers a customer, and essentially works backwards to build the production process. The *(2) value stream* is created by firms mapping services or production to ensure that each step provides value. *(3) Flow* aims at reorganizing processes so that customers or products move smoothly through the value-creating steps of the delivered service or the production process. The *(4) pull technique* implicates that each customer calls output from the previous step, on demand. Lastly, *(5) perfection* calls for constantly pushing towards the goal of meeting customer needs and towards continuous improvement of the process – without mistakes or defects.

4.5 Developing and Validating the Framework

After having outlined the broad theoretical field of Operations Management and explained the key concepts in use, we eventually define our theoretical understanding of implementing Case Management in our framework.

Our framework centers around the causal relations that have been established in the Variation Management concept as introduced above. We account for the fact that one should consider high variation in the health care sector as given (McLaughlin, 1996), and identify, reduce and manage variation in order to improve the strong negative effect of variation on operational performance (Modig & Ahlstrom, 2012). Thus, the concept accounts for the answers to: why implementing a Variation Management process/Case Management, and how to identify and reduce variation.

The central statements of Variation Management were completed by five lean principles (Womack & Jones, 2003); they guide the implementation of a service process that consumes fewer resources and delivers superior results. Thus, the concept of lean thinking describes how to implement Case Management as an efficient service process.

(0) Variation Reduction

In McLaughlin's (1996) work the importance of Variation Management within the health care sector, saying that “increasingly, health care industry leaders are recognizing that elimination of unnecessary variation is a necessary”, but also James (2005) confirmation of the applicability of SPC methods as tools to reduce variation can be used as a basis for the first variable of this framework.

Generally speaking, SPC methods can be used in order to identify the variation in demand and thereby enable to set certain demand groups apart from each other in order to design individual processes for these groups and ultimately reduce variation for the underlying process or system. The prerequisites of such variation reduction are on the one hand, to have all necessary information in order to quantify and specify the variation in the whole system. On the other hand, specific information about the causes of variation is necessary in order to separate the outliers individually and manage them separately.

When mirroring the understanding of variation reduction to the Case Management process (see figure 10), it becomes evident that the ① *Outreach / Screening* process step resembles

the above theory and thus reduces variation in the health care system by separating a group of care-intensive 'high-consumption' patients from the group of 'average' patients.

(1) Specify value

As Womack & Jones (2003) noted, the value of a (service) offering should solely be defined by the customer. By accounting for the customer's perspective when defining an offering, the outcome is likely to be accepted and effective. Despite the fact that there is argumentation around the patient being the customer, because the patient is not directly paying for the services (Kollberg et al., 2007), it is safe to say that the patient is the primary customer, because he justifies the existence of the health care service.

Thus, in health care value shall be specified from the perspective of the patient. In general, the service has to serve the patient's needs of comfort and treatment (Kollberg et al., 2007). More specifically, Grönroos (2007) found that the customer value in health care derives from medical quality, accessibility, participation, and interaction with and between the care providers as introduced above.

These factors very well tie into the setup of the Case Management process as supporting service (Grönroos, 2007). The Case Management process is built to give all care-intensive patients in need of "extra attention" access to the service, raise care quality for the patient and ultimately to smoothen the patients' treatment path. In this sense enhances Case Management the use of the core service health care for the ones that have been previously identified as causing much variation. Therefore, we see a fit of the theoretical implications with the process step ② of our Case Management framework.

(2) Identify the value stream

This principle is focused on the idea of identifying value streams in order to eliminate waste Womack & Jones (2003).

As Womack & Jones (2005) noted, value is primarily created when the patient meets the health care staff during diagnostics/treatment activities. However, additional services such as supporting services (i.e. Case Management) are necessary in order to not only facilitate the use of core services (in-/out-patient care) but also to increase the value of such additional services (Grönroos, 2007). For the purpose of identifying the value stream properly one has to keep in mind that Walley et al. (2006) pointed out that it is necessary to "understand the

behavior of processes" in order to apply SPC methods in general but also to the Case Management Process.

The role of Case Management in waste elimination is crucial in all three steps of the core service process (Grönroos, 2007):

- Accessibility to the health care service
- Interaction with and between the health care organizations
- Patient participation

Concluding, this step of value stream identification plays a crucial role within the context of the Case Management process, because the main objective of a Case Management initiative is to improve the coordination of the patients' care process (Löcherbach et al., 2002). This means, creating a map for a value-adding process, which is done in step ③ of our Case Management process framework.

(3) Flow

The third principle of lean thinking is supposed to create a smooth flow for the earlier defined value-adding process (J.P. Womack & Jones, 2003).

In the health care system, a smooth flow of the patient can be accomplished by focusing on the patient and monitoring the patients' flow through the health care system from the very beginning (first contact) to the end (discharge/end of treatment). It is crucial in this step to neglect traditional boundaries of jobs, departments and functions, and instead to "creat a continuous flow over these boundaries" (Kollberg et al., 2007). Such activity is of course very labor intensive, but this is no surprise as it was already mentioned by Buffa (1980), in his description of points to consider in the adaption of Operations Management to the service sector. Kollberg et al. (2007) also argue that it is necessary to make information transparent and visible for everyone in order to motivate involved people to improve the process.

The application of the *flow* to the normal health care situation is mainly focusing on the application of "Just in Time", in order to adjust capacity to demand. In the context of Case Management it is possible to guide the individual patient through the system. By monitoring the patient throughout the Case Management process with regular contact, it is possible to not only plan the treatment ahead, but also manage the patients flow through the system in the most efficient and comforting way, as suggested in step ④ of the Case Management process.

However, the above indication about the necessity of information availability, transparency and visibility might be problematic within the context of the German health care system.

(4) Pull

Theory suggests that the pull strategy means to produce goods or services upstream when the customer asks for it downstream (J.P. Womack & Jones, 2003).

In a way, "pull thinking" is often referred to letting the customer pull value from the firm instead of having the firm pushing already designed products or services on the market (Kollberg et al., 2007). In a health care service setting it is often the case that the pull strategy is already built into the production process because the service is created during an interaction and can thus not be inventoried for future use. The fact that a service cannot be inventoried has been one of the main characteristics of the Operations Management application in services (Buffa, 1980).

When considering the patient being the primary customer, this certainly holds. However, in the case of our Case Management process the pull strategy could be interpreted and thereby used differently. Considering that in a normal setting the health care service is only delivered on demand (e.g. when a patient goes to see a doctor), in the Case Management process – through close monitoring and regular contact – it is aimed for pulling the patient into a care setting (i.e. treatments or checks) when irregularities, which are often unnoticed by the patient, occur. Thereby the "pull" potentially prevents uncomfortable and more expensive treatments later on. This is an essential part of step ④ of the Case Management process. To give an example, Mr. Fox has a heart insufficiency amongst other things. Mr. Fox has a daily tracking of his weight through an internet-connected balance and Mr. Fox describes his condition to his Case Manager on a regular basis. Because of that, his Case Manager can recommend him an out-patient care check/treatment early on, that potentially prevents a heart failure which in turn would require hospitalization.

(5) Perfection

The principle *perfection* demands striving for perfection and continuous improvement in the implementation of services (J.P. Womack & Jones, 2003); in the context of health care services it can be regarded a central area of the theoretical framework. The consequences of failure by simply not doing everything right at the very first time or not continuously striving for improvement can be devastating (Kollberg et al., 2007).

In Kollberg et al. (2007) two reasons of failure are proposed: the lack of knowledge and the lack of attention. They argue that perfection can be achieved by motivating each individual to overcome the reasons of failure right from the beginning on. Adding to this, Kollberg et al. (2007) suggests setting ambitious and realistic targets for improvement but also having control of the process and working with continuous improvements.

All of the above mentioned prerequisites for perfection also hold when being applied to the context of our Case Management process (step ⑤ & ⑥). The organizational implications of setting ambitious targets that incentivize people are in particular important. Not least since several organizations are supposed to work towards the same goal of jointly treating complex cases. Additionally, working towards continuous improvement relates to the Case Management process, where revising the process setup constantly and for each individual patient can substantially increase the quality of care.

4.6 Summarizing the Theoretical Framework

The table below summarizes our theoretical framework by aligning the Case Management process Model with the combined theories from Variation Management and Lean Thinking, including the characteristics and contributing authors of the framework.

Case Management Process		Theoretical Framework		
Process Step	Action	Variable / Principle	Characteristics & Success Factors	Contributing Authors
Step ①	(a) Outreach (b) Screening	**(0) Variation Reduction**	▪ Understand causes of Variation ▪ Define criteria of causes ▪ Use SPC methods to identify and group outliers	Bennean & Kaminsky (1995) James (2005) Modig & Ahlstrom (2012)
Step ②	Assessment	**(1) Specify Value**	▪ Patient as customer ▪ Medical quality ▪ Accessibility ▪ Comfort of treatment	Womack & Jones (2003) Kollberg et al. (2007)
Step ③	Planning	**(2) Identify the value stream**	▪ Mapping the process ▪ Understand the behavior of the process ▪ Accessibility ▪ Interaction with and between the health care organizations ▪ Patient participation	Womack & Jones (2003) Grönroos (2000) Walley et al. (2006)
Step ④	Implementation/ Moitoring	**(3) Flow**	▪ Smooth flow through the process ▪ Monitoring the patient ▪ Sector crossing approach to guidance	Womack & Jones (2003) Kollberg et al. (2007) Buffa (1980)
		(4) Pull	▪ Service cannot be inventoried ▪ Systems pulls-in the patient ▪ Service is delivered upon request by the system	Womack & Jones (2003) Kollberg et al. (2007) Buffa (1980)
Step ⑤	Evaluation	**(5) Perfection**	▪ Prevent medical failure from lack of knowledge or lack of attention ▪ Set ambitious targets ▪ Control the process ▪ Seek continuous improvement ▪ Incentivize People correctly	Womack & Jones (2003) Kollberg et al. (2007)
Step ⑥	(a) Accountability (b) Reassessment			

Figure 11: Theoretical Framework

5 Methodology

In this chapter we present the methodology of the research at hand, which was applied on the standards and beliefs of the interpretivist paradigm.

The chapter starts with the discussion of the interpretivist paradigm, continues with the conceptualization of the research objectives in an explorative study, followed by the collection and documentation of data through qualitative interviews, and finishes off with the coding and analysis of data through a thematic analysis. For a better illustration, we have outlined the order of our study activities in figure 12.

	Phase I	Phase II	Phase III
	Operationalization Exploratory Study	**Data Collection and Documentation**	**Data Coding and Analysis**
Time	August - September '13	1st of October - Mid of October '13	Mid of October - Mid of November '13
Content	▪ Collection of background knowledge ▪ Pre-Study ▪ Development of interview guideline ▪ Testing (feasibility, validity, reliability) ▪ Adoption ▪ Identification of potential interviewees ▪ Contacting potential interviewees ▪ Scheduling face-to-face interviews	▪ Conducting Interviews ▪ Purposefully selected ▪ Random order ▪ Documentation of interviews ▪ Notes ▪ Recordings ▪ Transcription of recordings	▪ Reading interviews the first time ▪ Identifying patterns ▪ Coding with the 7 main codes ▪ Analyzing themes across codes ▪ Report

Figure 12: Methodology Flow Chart

5.1 Interpretivist Paradigm

A researcher's worldview, which manifests itself in research paradigms, strongly defines the study's configuration because a paradigm defines ontology (what is reality), epistemology (how to know something), and methodology (how to find out about something) (Guba, 1990). These worldviews or research paradigms can be sorted in 4 categories, which are displayed in figure (see figure 13).

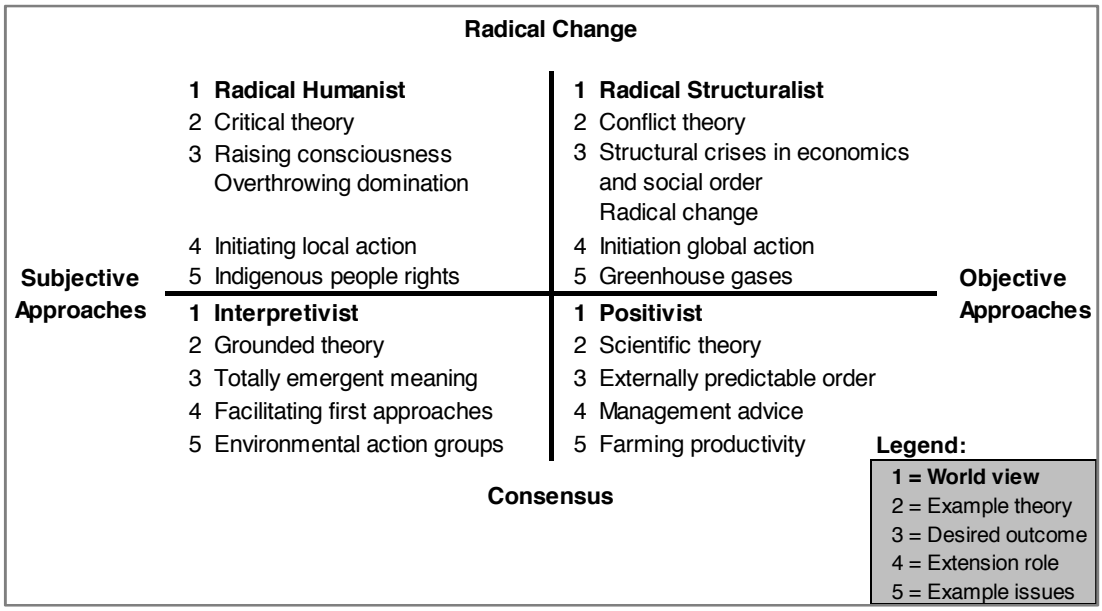


Figure 13: Paradigms
Adapted from (Parminter, Botha, & Small, 2003), based on (Burrell & Morgan, 1994)

In this study an interpretivist perspective was taken as we agree with Angen (2000), Haraway (1988) and others who perceive knowledge as perspectival, therefore incomplete and open to reinterpretation. Interpretivism argues that there are several truths and realities rather than one objective reality. Such opinion is shared by positivist philosophy. Instead of radical change (Radical Structuralism), or predictable orders (Positivist), interpretivists seek emergent meaning (see figure 13). Our desired outcome is an interpretive answer to the imposed research question what obstacles to Case Management are perceived by relevant actors of the German health care system.

5.2 Exploratory Study Approach

The study at hand was conceptualized from our interpretivist perspective and uses an exploratory approach. We have chosen to design an exploratory study because there is currently little empirical knowledge about the perceived obstacles to the implementation of Case Management processes for care-intensive patients in Germany. Due to geographical differences between health care systems (e.g. remuneration, general system structure), the knowledge about perceived obstacles to the implementation of Case Management processes from other countries is insufficient to answer the very same question for the German health care system. Although Case Management can be regarded as a process that could be discussed within the context of Operations Management, the current literature is not sufficient to answer

specifics about Case Management and can only provide hints instead of hypotheses. In addition, we perceive it as unrealistic to use quantitative investigations in this complex system and under such time constraints. The same line of reasoning has been used by (Piercy & Rich, 2009) who explored a related service operation theme with exploratory methods.

5.3 Alternatives to the Exploratory Study Approach

When narrowing down the selection of applicable study techniques, we also considered empirical action research, because our initial intention was not only to test and build theory but also to simultaneously trigger action to change.

Besides our intention, several other reasons also supported the use of action research. For example, Westbrook (1995) suggests the use of action research in unstructured and highly integrative settings (what applies to the perception of processes in the German health care system). "The iterative, interventionist nature of action research ensured closeness to the full range of variables in settings where those variables may not emerge all at once" (Westbrook, 1995), and also Coughlan & Coghlan (2002) point out, that the Operations Management field would benefit from new insights from the action research perspective.

Eventually, we rejected action research for two major reasons. First of all, it was unlikely that our study would trigger change within our limited scope of time. Secondly, action research demands high skills of the researcher, which we – as less experienced researcher – may not have. Given this background, our choice of exploratory research seemed more adequate.

In addition, we considered a text analysis (internet, magazines, blogs, newsgroups) or 'netnography' (as it is termed by Kozinets (2002)) which could have given us a picture of the perception of the potentiality by different stakeholders. According to Silverman (2013) this requires a large quantity of data to address the topic effectively. In addition to those constraints our concerns of not being able to identify the relevant text sources were convincing enough to seek face-to-face interviews or telephone interviews, even though that implied organizing interviews in Germany and traveling there.

5.4 Pre-Study

Prior to collecting data via semi-structured face-to-face interviews, we conducted a pre-study aiming at three things: Firstly, gain an understanding of the "current state" of Case

Management in Germany. Secondly, get to know the practical execution of Case Management and thirdly, familiarize with the less obvious characteristics of the German health care system that were difficult to identify through internet research and studies that date back several years.

We conducted five open interviews with two experts of Case Management in Sweden, and three experts in the field of Case Management in Germany. The insights from these interviews were predominantly used in order to find the focus for the research at hand, i.e. the specific focus on obstacles to the further implementation of Case Management.

The interviews in Sweden were conducted face-to-face and in English with both of us present. All three interviews with experts in the field of Case Management in Germany were conducted on the telephone and in German.

Number	Background	Date
1	Health Care Reseach Expert	20.08.2013
2	Case Management Research Expert	02.09.2013
3	Case Management Research Expert	09.09.2013
4	Health Care Reseach Expert	13.09.2013
5	Health Care Reseach Expert	16.09.2013

Table 2: Overview Pre-Study Interviewees

5.5 Data Collection

Following, we will describe our data collection in more detail. This will cover the characteristics of the applied interview style, the background of interviewees and interviewers and finally the setting and specifics of the interviews.

5.5.1 Qualitative Interviews

In our study we decided to use the methods of qualitative, semi-structured interviews because they fit with both the exploratory approach and interpretivism. They further provide an opportunity for interviewees to express their concerns and practices without being bound by a specific question catalogue (Cole, 2006; Weaver & Olson, 2006).

Unlike quantitative research, qualitative research is not concerned with establishing correlations between variables and cannot present input-output-relations of some phenomenon. However, qualitative research describes how a phenomenon is locally

constituted (Silverman, 2013). Something that is perceived as being particularly effective in the exploratory phases of health care research (C. Pope & Mays, 2006).

The choice of qualitative research is confirmed by an emerging body of literature using qualitative interviews successfully. Amongst others, Gensichen et al. (2012) with their study about the patients' perspective on Case Management; Peters-Klimm et al. (2009) with their study of the physicians' view of primary-care based Case Management; and Steinman et al. (2012) who aimed to explore evidence-based care programs from the staffs' perspective.

5.5.2 Purposeful Sample of Interviewees

In this study we sampled interviewees purposefully in order to gather the most information-rich data within the limited time of this Master's thesis by combining two strategies: maximum variation sampling and convenience sampling (Maykut & Morehouse, 1994; Patton, 1990).

First, relevant stakeholders of the German health care system who represent a wide range of perspectives on Case Management were 'maximum variation sampled'. We achieved this through an intensive internet research and consequently contacted 87 potential interviewees via email. The relevance of stakeholders was defined according to four variables in order to ensure getting experts' opinion, and all interviewees fit these four variables.

Variable	Characteristic
Stakeholder	Statuary health insurance, Private health insurance, In-patient care, Out-patient care, Government body, Intermediaries, Case Management provider, Health care consultants, Research institute
Function	Strategy, execution, advisory, evaluation
Experience in the Industry	> 2 year
Experience with Case Management	> 1 year

Table 3: Variables for Interviewee Selection

After having sampled the potential interviewees according to 'maximum variation sampling', we engaged in convenience sampling, meaning that the contacted, potential interviewees who replied first were included in the final sample. This was necessary in order to be able to finish the study within the time frame of one semester. Approximately 25 of the 87 potential interviewees which we had contacted agreed to an interview, but we only managed to interview 19 of them.

Close attention was paid to the sampling in order to increase the reliability of the study results, and to control the potential bias that comes with doing qualitative research. Without

the purposeful selection of participants the data set would potentially comprise only an insufficient range of perceptions. The purposeful selected participants in the study account for a broad and nuanced picture of the perceived obstacles to further implementation of Case Management in Germany, as the summary table below shows (table 4):

Number	Institution / Background	Date
1	Statutory Health Insurance	30.09.2013
2	Hospital	07.10.2013
3	Statutory Health Insurance	08.10.2013
4	Private Health Insurance	09.10.2013
5	Health Care Advisory Firm	09.10.2013
6	Statutory Health Insurance	10.10.2013
7	Statutory Health Insurance	11.10.2013
8	Statutory Health Insurance	11.10.2013
9	Statutory Health Insurance	11.10.2013
10	Statutory Health Insurance	14.10.2013
11	Statutory Health Insurance	14.10.2013
12	Health Care Research Expert	15.10.2013
13	Statutory Health Insurance	16.10.2013
14	Hospital	17.10.2013
15	Case Management Service Firm	17.10.2013
16	Statutory Health Insurance	18.10.2013
17	Statutory Health Insurance	18.10.2013
18	Case Management Service Firm	21.10.2013
19	Hospital	21.10.2013

Table 4: Research Interviews

5.5.3 Interviewers

Both of us were born and raised in Germany and both have parents working as physicians. Thus, we were familiar with the German health care system to some extent before beginning the Master's thesis project. The implication of this family background will be further discussed under point 5.9 Validation.

Throughout the research phase, none of us specialized in one area, but we both acquired roughly the same knowledge about Case Management and were able to interchangeably ask questions and challenge statements throughout the interviews.

Further, none of us had advanced experience with qualitative, semi-structured interviews, but we both have conducted interviews throughout the first two semesters of the Master's

program. We were used to working and interviewing together as we have been involved in a five-months consulting project in our second semester. All of this contributed to the smooth interview process in which we complemented each other well.

5.5.4 Interview Setting and Procedure

In total we conducted 24 expert interviews. Five of those account for our pre-study, as described in section 5.4, and 19 interviews account for our main exploratory study. The 19 interviews were divided as follows: 12 health insurances (SHIs and PHIs), 2 care providers (i.e. hospitals), 2 Case Managers and 3 other relevant stakeholders related to Case Management research and advisory in Germany. Interviewees were not supposed to have a preliminary question catalogue as we aimed for having a truly open conversation (Silverman, 2013). However, 3 participants explicitly requested and were consequently provided with the six guiding question catalogue (see Appendix). In retrospective we did not perceive a different development of the conversation, perhaps because they read but did not remember the questions during the interview in detail. Before interviews commenced, we addressed all of the participants' questions and concerns, such as confidentiality etc. Questions regarding the participants' experience in the industry, their position, and their experience with Case Management were asked via Email directly after the interview.

All our interviews lasted between 45 and 90 minutes and all of them began with the introduction of our basic understanding of Case Management in order to enhance the comparability of the different interviews.

All but 4 of the 19 semi-structured interviews took place during a two-week period in October 2013 in ten different German cities, because the stakeholders' main offices are located across Germany. Four interviews were conducted via telephone because scheduling a personal interview within the time which we spent in Germany was not possible. All interviews were held in German because all interviewees' first language was German. We interviewed the majority in a private place (i.e. conference room) specified by the participant, usually at their place of employment. This ensured that the interviewees felt relaxed and content enough to openly share their perceptions with us (Silverman, 2013).

All interviewees were asked for permission to be recorded during the interview in order to complement our notes, and all except one agreed to it. When asking for such permission, we explained that we would use the recordings upon strict scientific standards and only within the context of this thesis. After having asked for permission, we placed a professional recording device on the table.

All interviews differed in content because of their semi-structured nature with six guiding questions (see Appendix X), which left enough room for spontaneous, deepening questions. This was recommended for an exploratory approach with semi-structured interviews in order to capture the many potential aspects of an unexplored field (Silverman, 2013).

We were both present during all interviews in order to decrease the possibility that one researcher would interpret things differently due to an individual bias and in order to enhance the validation our study (Constas, 1992).

5.5.5 Privacy and Confidentiality

Every measure was taken to keep all research data private and confidential as it was highly recommended by Silverman (2013). The only other people who had access to the research data were the professional transcribers who had signed a confidentiality agreement. No copies of the audio tapes or corresponding transcripts were made.

5.6 Documentation of Data

All our interviews were recorded using a professional recording device that produces high-quality recordings. In addition we took notes throughout all interviews and consolidated them in contact summary sheets directly after the interview. The use of contact summary sheets is recommended by (Miles & Huberman, 1994) and its reflective nature proved to be valuable throughout our research process.

For transcribing the interviews, we contracted an independent, professional transcription service provider under a confidentiality agreement. All recordings were transcribed in German and not translated. The typed transcripts varied from 10 to 30 single-spaced pages. Notes from the one interview that was not recorded were translated by the researchers themselves.

We made the decision to contract a service provider, because we favored the time for interviewing a wide range of relevant stakeholders plus a thorough analysis more than transcribing and thereby familiarizing with the data. The quality of the transcripts was randomly checked with the recording when reading the transcripts for the first time, and always when we felt that something read unfamiliar or wrong which was the exception. The potential bias resulting from the decision will be discussed under point 5.9 Validation.

5.7 Analysis of Data

In our study, we used the thematic analysis, which is a common approach for identifying and analyzing unstructured, qualitative data like ours (Braun & Clarke, 2006). Hereby, recurring topics in the data set are labeled with a "code", within which patterns or trends across the interviewees' answers are then identified, e.g. within a code safety – the trend of a "false sense of safety" might emerge.

The thematic analysis is especially useful for capturing the "rich, detailed, and complex data" (Cassell, Bishop, Symon, Johnson, & Buehring, 2009) and was thus ideal for our study considering the length of interviews and the variety of interviewees' backgrounds. In addition, the method of thematic analysis is well applied in qualitative health care research as it provides the researcher with interviewees' experiences and the according context (Steinman et al., 2012).

Our thematic analysis took place on the semantic level, meaning that themes were only identified on the explicit or surface level, i.e. what an interviewee has said not what she might have thought or assumed. We excluded the latent level because we aimed for a nuanced understanding of what had been explicitly stated (Braun & Clarke, 2006). The exclusion of the latent level however, does not mean that we did not set the statements into context. Naturally, much of the depth that could have surfaced in a latent analysis is lost in exchange for a nuanced understanding of what had been explicitly stated (Braun & Clarke, 2006).

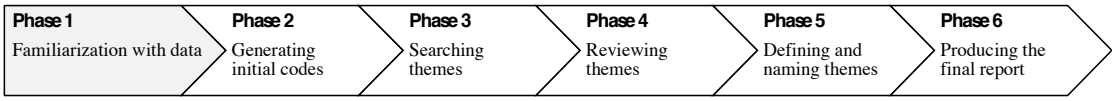
Furthermore, we applied both an inductive and a deductive approach throughout the analysis of data. Firstly, an inductive approach was used for generating the codes and themes, meaning that we did not use literature in these early stages of the analysis. Instead, our codes and themes were data-driven. This is because our aim was to explore the perception of stakeholders and we thus had to avoid categorizing data in theory-driven codes or themes. Secondly, a deductive approach was used when setting the themes (i.e. obstacles) into context with our theoretical framework for review and validation.

In order to structure the already complex analysis process we found it useful to follow the six-phase guideline (Braun & Clarke, 2006) shown in table 5.

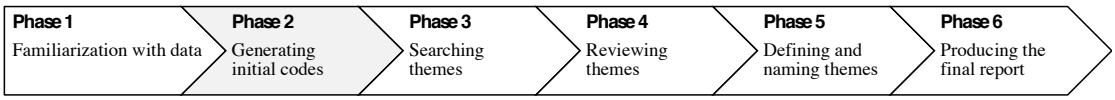
Phase	Description of the process
1. Familiarising with the data	Transcribing data (if necessary), reading and re- reading the data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic „map" of the analysis.
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of extract examples, final analysis of selected extracts, relating the analysis to the research question and literature, producing a scholarly report of the analysis.

Table 5:Phases of Thematic Analysis (Braun & Clarke, 2006)

5.7.1 Phase 1 – Familiarization with data



In phase one we familiarized with the data set as suggested by Braun & Clarke (2006). Firstly, we went through the contact summary sheets which were produced directly after each interview and where we had listed ideas that would contribute to answering our research question on the perceived obstacles of further implementing Case Management in Germany. This step helped us in refreshing what we had already identified as relevant. Secondly, we individually read the transcripts of all 20 interviews and simultaneously took notes, corrected



spelling mistakes, and compared passages that read unclear or false with the recording.

5.7.2 Phase 2 – Generating initial codes

Phase two started off with the discussion of our notes that resulted in a list of codes we found relevant based on their frequency across the data set. As previously done by Steinman et al. (2012) we provided supporting passages as evidence when disagreement arose and reasoned until a final list was developed. Following, we read the interviews a second time and coded

passages parallel. Further reading-rounds of the full transcripts were neither necessary, nor possible considering the time constraints of the Master's thesis project.

We extracted the text passages in separate documents for each code and red through the codes again. Hereby, we saw that only text passages coded with 7 of the 18 codes referred to a problematic or complicated matter. Consequently we decided to focus on these 7 codes and called them "prominent codes". The other codes contained very interesting yet not supporting information for answering our research question and were consequently neglected.

The prominent codes were put into text in a descriptive manner and quotes were hereby translated for the first time. We explicitly waited with translating the text until the end as even with the most careful translation information might get lost.

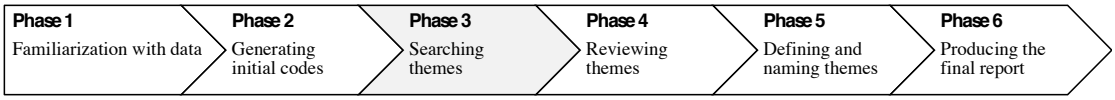
Initial Ideas	Codes	Prominent Codes
1 Data	1 Data	1 Data
2 Incentives	2 Incentives	2 Incentives
3 Identification	3 Identification	3 Identification
4 Participation	4 Participation	4 Participation
5 Political Importance	5 Contracts	5 Contracts
	6 Cooperation	6 Cooperation
	7 Trust	7 Trust
	8 Definition	
	9 Medical effects	
	10 Economic effects	
	11 Political Imortance	
	12 Potential of Case Management	
	13 Initiation Channels	
	14 Control	
	15 Gaps in health care	
	16 Acceptance	
	17 Resistance	
	18 Trust	

Table 6: From Ideas to Prominent Codes

Code	Initial German Code & Equivalents	Code in Context	Explanation of Code
Data	Daten, Informationen	Data for doing Case Management	Data refers to text segments which contain issues with the patient's past, current and future data. Data hereby includes not only diagnoses but also soft factors, e.g. the patient's emotional condition
Incentives	Incentives, Anreize, Interessen, Motivation	Incentives to initiate or engage in Case Management	Incentives refers to text segments which contain issues related to financial and non-financial motivation for Case Management among stakeholders
Identification	Selektion, Auswahl, Identifikation	Selection of eligible patients	Selection refers to text segments which contain issues with the selection of patients for Case Management. Not covered within this code were the selection criteria, e.g. diagnosis
Participation	Partizipation, Teilnahme	Participation of eligible patients for Case Management	Participation refers to statements about the enrolment of patients in Case Management
Contracts	Verträge,	Contracts between stakeholders of Case Management	Contracts refers to statements which contain issues about contracts between stakeholders of Case Management
Cooperation	Zusammenarbeit	Collaboration between stakeholdes of Case Management	Cooperation refers to text segments which contain issues related to non-contractual interaction between stakeholders of Case Management
Trust	Vertrauen	Trust of patients in Case Management	Trust refers to text segments which contain issues related to the patient's trust

Table 7: Description of Prominent Codes

5.7.3 Phase 3 - Searching themes among codes

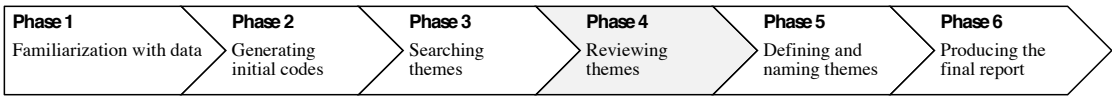


Phase three consisted of analyzing themes within the 7 prominent codes using the inductive analysis, whereby raw data was interpreted without relating it to theory (Thomas, 2005). The inductive analysis enabled us to account for the variety that comes with an exploratory approach.

As justified in the previous section the 7 prominent codes were already known to define a problem field. Our subsequent aim was to identify the frequently mentioned and emphasized issues/obstacles within this problem field. Hereby, we made sure that all extracted obstacles fulfilled the criteria of being brought up by a higher number of interviewees (>12) and that they were strongly emphasized. Thereby, we ensured to stick to the perception of stakeholders and not our interpretation of what we believed might be an important obstacle. By concentrating on what was perceived by a majority we believed to extract issues that can be generalized and have a wide applicability while aspects that were mentioned only once were mostly related to the specifics of a single Case Management program. In this sense, we define theme in our thesis as an issue and thus an obstacle. We applied the inductive analysis to the consolidated text passages within the 7 prominent codes.

In the subsequent deductive analysis we checked which and especially how the inductively derived themes (i.e. obstacles) fit into the characteristics of the previously presented theoretical framework.

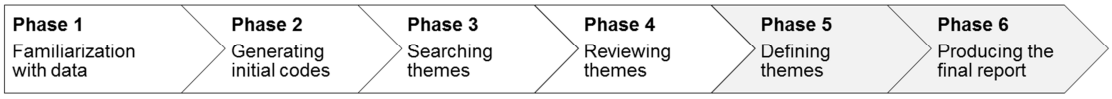
5.7.4 Phase 4 - Reviewing themes



In Phase four we reviewed the themes. In our case this meant that we related the identified themes (i.e. obstacles) to the theoretical framework. Thereby matching the themes and underlying statements with the characteristics of each variable/principle of the theoretical framework.

Given the frequent critique of the thematic analysis as too subjective, biased, and determined by the researchers' reflection and judgment we aimed to be as unbiased as possible by sticking to clear statements from the interviews as well as clearly defined characteristics of the theoretical framework.

5.7.5 Phase 5 and 6 – Defining and naming themes, producing the final report



In Phase five we did not define the precise names of our themes as they were already identified earlier as representing the obstacles. Thus they were already termed in a finalized manner and it was specified what they entail. However, we did take the themes (i.e. obstacles) and set them into context with our initially introduced and theoretically validated generic Case Management process model, thereby closing the circle of practice, theory and relating back to practice.

Although (Braun & Clarke, 2006) suggest two different steps for the analysis, we simultaneously concluded the analysis and produced the final report, thereby combining phase five and six.

5.8 Alternative to the Thematic Analysis

For data processing, a phenomenographic analysis, which would have fit the interpretivist paradigm and exploratory nature, was considered but omitted. Although Barnard, McCosker, & Gerber (1999) pointed out that "the approach is useful particularly in research concerned

with (...), and the development and management of health care services". However, we perceived the thematic analysis to be more pragmatic and thus more appropriate for research concerned with a practical matter rather than a phenomenon. In addition, it has proven to be a successful approach in similar studies, among others *"Exploration of GPs' perceptions of Case Management, subsequent changes in relationships within the practice team and the potential future role"* (Peters-Klimm et al., 2009), or "*The understanding of the implementation of a Program to Encourage Active, Rewarding Lives for Seniors (PEARLS), a depression care management program*" (Steinman et al., 2012).

5.9 Validation

From our interpretivist perspective we cannot reach the same objectivity as it would be possible with positivist research (Jardine, 1990; Sandelowski, 1993). Nevertheless, we do perceive it as crucial to state our sources of potential bias and how we handled them in order to be as close as possible to the ideal of objectivity.

The first potential bias derived from the fact that our data might have been distorted by the external transcription service (as described in section 5.6). We tried to minimize this threat by creating contact summary sheets, which we mirrored against the transcripts while reading the transcripts in the first round of reading.

The second bias derived from our interviewee sample. In our sample, interviewees working at health insurances were dominating and thus an explicit source of bias. We tried to control that throughout our interpretation by always pointing out who has made a statement. In this context we perceived our own background from 'doctor families' (as described in section 5.5.3), as balancing the above stated dominance. However, our background might as well constitute another source of bias towards the perception of care providers/physicians.

The third bias derives from the thematic analysis, because of the variety of possible interpretations of themes and themes within texts. In this study the reliability was increased because both researchers coded the transcripts simultaneously, and for example diverging interpretations could be discussed and in case of high uncertainty double-checked with the recording or even the interviewee (Guest, MacQueen, & Namey, 2012).

6 Empirics

In this chapter we display the empiric results of our exploratory study. In order to ease the understanding, we will first give a brief introduction about how we structure this section and then go over into presenting the results. When summarizing the empiric findings in the end of this chapter, we will be able to answer the first of our three research questions.

6.1 Introduction to the Presentation of Results

The presentation of results will follow the prominent codes introduced in chapter 5. The prominent codes, which we extracted from a broader list of codes, had been mentioned in relation with issues, problems or other constraints to Case Management. These codes, their context and explanation, as well as their original German equivalents are summarized in table 8 below. The conceptualization was used as a heading for each of the below sections in order to improve the understanding for the reader.

It should be mentioned that our presentation of results goes beyond simply listing what we found through the codes in our interviews. The primary reason why we decided to deviate from the classical approach of only showing interview data is because our large data set with 20 interviews would have forced us to go beyond the scope of what can be presented within the world limit of this thesis. Moreover, we believe that the way we present the results eases the understanding and overview of our findings. Therefore, we not only present what our codes revealed from the interviews, but also accentuate the predominant themes in terms of issues.

Code	Initial German Code & Equivalents	Code in Context	Explanation of Code
Data	Daten, Informationen	Data for doing Case Management	Data refers to text segments which contain issues with the patient's past, current and future data. Data hereby includes not only diagnoses but also soft factors, e.g. the patient's emotional condition
Incentives	Incentives, Anreize, Interessen, Motivation	Incentives to initiate or engage in Case Management	Incentives refers to text segments which contain issues related to financial and non-financial motivation for Case Management among stakeholders
Identification	Selektion, Auswahl, Identifikation	Selection of eligible patients	Selection refers to text segments which contain issues with the selection of patients for Case Management. Not covered within this code were the selection criteria, e.g. diagnosis
Participation	Partizipation, Teilnahme	Participation of eligible patients for Case Management	Participation refers to statements about the enrolment of patients in Case Management
Contracts	Verträge,	Contracts between stakeholders of Case Management	Contracts refers to statements which contain issues about contracts between stakeholders of Case Management
Cooperation	Zusammenarbeit	Collaboration between stakeholdes of Case Management	Cooperation refers to text segments which contain issues related to non-contractual interaction between stakeholders of Case Management
Trust	Vertrauen	Trust of patients in Case Management	Trust refers to text segments which contain issues related to the patient's trust

Table 8: Definition of Codes (2)

In every section we tried to follow the same structure of first presenting the main issue /issues (i.e. obstacles) that surfaced within this prominent code and then showed the context as well as related aspects. Hereby, main issues are those derived from the inductive analysis we engaged in, based on the frequency and emphasis interviewees referred to the issues. They can be understood as obstacles in our earlier definition.

In order to enhance understanding of these aspects, we used selected quotes throughout the chapter. The quotes are labeled with the interviewee's institutional background, the interviewee's function, and a randomly assigned number that has no meaning. Labels are separated by underscores and all labels illustrated in table 9 below.

Acronym	Description
SHI_S_NUMBER	Person working for a statutory health insurance on the strategic and organizational level of CM
SHI_EX_NUMBER	Person working as a Case Manager for a statutory health insurance
PHI_A_NUMBER	Person working as a CM consultant for statutory health insurances
PHI_S_NUMBER	Person working for a private health insurance on the strategic and organizational level of CM
CP_S_NUMBER	Person working for a hospital on the strategic and organizational level of CM
P_S_NUMBER	Person working for a CM service provider on the strategic and organizational level of CM
A_S_NUMBER	Person working as CM consulant at a CM advisory firm
RI_EV_NUMBER	Person working with evaluation studies of CM for a research institute

Table 9: Interviewee Labels and Descriptions

6.1.1 Identification of Eligible Patients for Case Management

When coding the interviews for *identification*, we discovered that the main issue which interviewees frequently and strongly referred to was the faulty identification of patients because the ones selecting the patients are rewarded on a "per patient" basis, even if they select non-eligible patients.

Within the context of identifying patients for a Case Management program, our interviewees recurrently referred to what we interpreted as the intentional faulty selection of patients. With faulty they described a situation where the ones selecting the patients – the intake as described by Wendt (2005) – purposefully enroll patients for whom Case Management is actually not useful. Usefulness usually compiles hard criteria such as diagnosis and softer criteria such as personal situation and condition. The compliance to these criteria is perceived as controllable when the selection is in the responsibility of the Case Management program owners, but not if the responsibility lies with external partners. Thus, the issue is especially related to the

situation when Case Management owners have outsourced either only the identification, or the identification and execution to independent Case Management service firms or physicians.

> *"When we select participants, the acquisition is completely with us and we can control everything; otherwise many participants will be selected for whom Case Management is not useful." – (SHI_S_03)*

> *"We have our own ranking list with all our high cost cases and exclude cases where a Case Management intervention does not help, e.g. cancer. Hereby, we ensure the correct selection." – (SHI_S_02)*

The root cause of this issue is perceived to be the reimbursement system. External partners are often reimbursed on a "per patient" basis, meaning that every patient who fulfills the criteria and enrolls in the program results in a higher compensation. Interviewees hereby assumed that the fulfillment of criteria can be compromised by the ones selecting the patients. This might be the case because even if the criteria for selection are set, the actual diagnosis is an expandable definition. Ultimately, this can result in the design of the reimbursement system producing unintended side effects.

> *"External providers, e.g. telemedicine providers, sometimes acquire more patients than necessary because they are paid per participant." – (SHI_S_04)*

We do not want to neglect the interviewees who did not perceive the flaws in the reimbursement system an issue within the field of identifying eligible patients. Those interviewees argue for identifying the eligible patients themselves, because of the greater possibility to control the criteria of identification and the intake of patients.

> *"We have to offer Case Management target-oriented. We position the lever right with the patient's first hospitalization, do the identification by ourselves and then case-manage him." – (SHI_S_04)*

Moreover, they questioned if a physician has the capacity and competence to engage in such Case Management activities.

> *"There are not enough general practitioners and I doubt that a practice can coordinate Case Management. It is already difficult when the GP has to diagnose and send patients to specialists because he theoretically requires both broad and specialized knowledge." – (CP_S_19)*

Eventually, they argued, assuming a GP had enough competence and capacity, the costs for Case Management would be likely to increase since more knowledgeable people demand higher reimbursement for such identification and selection activities.

> *"The better educated the person who is doing the identification and selection is, the more expensive it gets." – (CP_S_19)*

6.1.2 Data for Doing Case Management

Early on and across interviewees we recognized a strong tendency of data being a central problem field when implementing Case Management in Germany. Through the inductive analysis of the *data* code we then found that the recurring statements tied into one major issue data unavailability:

The unavailability of data, meaning that the fragmented health care system in Germany and the governmental restrictions constrain both the availability of data and the possibility of data usage.

Within the data problem field, our interviewees continuously referred to the constrained availability of necessary data. Hereby we understood that they defined data as the patients' cross-sectional past, present and future diagnosis as well as the information related to his or her personal life. Its importance derives from the fact that data provides the central possibility to identify and control the patients, e.g. the possibility to find the suitable patients and to steer them through the health care system.

> *"We lack the central possibility to steer; we do not reach the patient. We do not know in advance that a hospital treatment is taking place."– (SHI_S_13)*

Our interviewees explained the unavailability of data with the system's set up and the data protection law in Germany. To be specific, the fragmentation of the German health system accounts for data being obtained and stored by different stakeholders. A central place for all data does not exist, because Germany, unlike other countries, has no electronic patient record.

> *"There is an increasing fragmentation of care. Especially in the case of multi-morbidity it is difficult when nobody has the overview and reverse-medication or double-medication occurs." – (RI_EV_14)*

"We do not have an electronic patient record and a platform where we can exchange patient data." – (SHI_S_02)

The other aspect of the identified issue of data unavailability is the fact that data usage is restricted. Interviewees largely agreed that the small extent to which Case Management providers, for example health insurances, are allowed to use their clients' data and share this data harms the roll out of Case Management.

"If one tries to roll out Case Management, things such as data protection laws are limiting the possibilities." – (SHI_S_04)

We want to note that data or data protection was not perceived as problematic for Case Management providers by every interviewee.

"Obstacles due to data protection exist, but for us rather in theory. – (SHI_S_01)

The reasoning for such attitude is that these Case Management programs are practice-centered, meaning a physician selects patients and the Case Manager manages patients. Thus, the information comes predominantly through the patient himself, who has a trusted relationship with the Case Manager, which might increase the availability of data.

"Due to the conceptualization of Case Management the input regarding the need for a Case Manager comes predominantly from physicians and also from the insured relatives, and consequently the necessity to use data in any way did not come up." – (SHI_S_01)

"We try to overcome this problem by cooperating with the hospitals or physicians."– (SHI_S_13)

6.1.3 Participation of Eligible Patients in Case Management

Our coding within the problem field of participation clearly pointed to the issue of having generally low participation. This is measured upon the fact that the patients' rate of enrolment in Case Management programs is low.

We found that Case Management programs in Germany have very low enrolment rates of 10% to 40%, whereby the rate is defined as the percentage of patients who enroll in a Case Management program of all patients who were contacted and asked to enroll.

> *"Participation rate is a problem with all Case Management programs that we initiate, with all programs that are initiated by statuary health insurances." – (SHI_S_03)*

In order to understand the enrolment rate and especially varying enrolment rates, one has to differentiate between the following three scenarios:

1) Participation when insurances initiate the Case Management program:

In the first scenario one health insurance provides and executes the Case Management program internally, the other provides the Case Management program but assigns the execution to an external Case Management service firm. The first has a higher enrolment rate. Interviewees explained the difference with the fact that the patient has to sign a declaration of consent to grant the right that data is shared with another company. Apparently this marks a barrier for the patients.

> *"…enrolment of 10-25% maximum if it is an external provider offering the Case Management initiative. – (SHI_S_02)*

> *"It depends. If we [Case Management service firm] call the potential participant a second time, I would say [the enrolment rate is] 10%." – (P_S_09)*

2) Participation when physicians offer the Case Management program:

In the second scenario, the health insurance offers a Case Management program through the physicians and the participation/enrolment rate is at 25-50%, thus, higher than the previously mentioned 10-25 %. Interviewees explained this with the fact that the patient does not have to change any habits, but stays with the physicians that he or she usually visits and trusts. In other programs the Case Management providers have contracted physicians and the patient is supposed to only visit those.

> *"We have 25-50% [enrolment rate in] diabetes programs, because we have the physicians working with us."– (SHI_S_03)*

> *"Many do not participate because their usual doctor is not part of the program." – (PHI_S_12)*

3) Participation rate when medical condition does not seem severe:

In the third scenario, the patient is in a medical condition that feels not severe in the very moment the patient is asked to participate in a Case Management program, e.g. no pain or major problems. Here, interviewees mentioned that patients tend to disregard their sickness and decline the Case Management offer.

> *"It is extremely difficult to get the patients in the very moment where it would be most important to enroll them in a Case Management program, because they do not care when they have no immediate pain." – (SHI_S_03)*

Regardless of the above-mentioned considerations, some Case Management providers claim to have the right strategy to ensure high participation of patients. We base this conclusion on those interviewees mentioning a very high acceptance among patients. They related the success to their focus on informing the patient in detail. Informing in this sense was described as giving the patient evidence for why participating in the Case Management program verifiably results in a more optimal (higher quality) treatment for the patient.

> *"You can only convince clients with information, as easy as that. You can inform, you can make suggestions and the client either accepts or he doesn't" – (PHI_S_15)*

> "*Perhaps the scale is low because the population is not informed about it. This would be the responsibility of the health insurances." – (CP_S_07)*

6.1.4 Trust of Patient in Case Management

The coding indicated that one prevailing issue within the problem field trust is the ineffective communication due to a lack of trust between the patient and the Case Manager or the Case Management program.

Our interviewees frequently stressed the correlation between the patient's trust, or trusting relationship, and the functioning of the Case Management. Without the trust, the functioning of the Case Management is potentially harmed. Hereby, a functioning Case Management basically means having an effective communication between the Case Manager and the patient. Effective in terms of having a patient who not only shares information honestly with his Case Manager in order to develop an individual care plan, but who also trusts the Case Manager's advice and follows the care plan.

> *"Getting close to the patient is important in order to enable Case Management operations. That requires building a trusting relationship on the phone." – (SHI_S_01)*

> *"The client needs to have trust in the intervention." – (PHI_S_15)*

The previously mentioned aspects of having a patient who shares information honestly because he trusts the Case Manager and the Case Management program in general is an important issue to consider. Considering a patient who does not share personal information or is intentionally lying – this extremely affects the effectiveness of communication.

Some interviewees pointed out that the communication becomes more intimate and personal if it is not only on the phone but also through personal meetings. Others were convinced that trust can be built on the phone even though no personal contact ever existed, and others perceived the frequency of contact an important factor.

> *"We found it [the communication between the Case Manager and the patient] to be effective in most cases when we call the insurant [patient] several times. Then there is a basis of trust and patients are even happy if we call and talk honestly with us." – (P_S_09)*

> *"After a while when you have built trust it is as if you know each other personally and you start sharing a lot with each other." – (PHI_S_12)*

> *"In our opinion they [the Case Managers] should directly be involved in the care of the patients because the intimacy is important in order to get to know everything about the patient." – (CP_S_07)*

Interviewees perceived the effectiveness of the communication to be higher in a scenario where information about the Case Management can be explained to the patient. That is because information provides the patient with evidence, resulting in increased trust. Evidence was hereby understood as being related to hard quality factors of Case Management, for example the reduced number of complications enrolled patients have experienced. Vice versa, if the intention behind the Case Management program cannot be explained to the patients, then a lack of trust is more likely to occur.

> *"We rely (…) but on hard quality factors that one can explain to the patient." – (SHI_S_13)*

"We gain the trust of our clients through transparency about what our intention is and about what we can offer - and the client can decide." – (PHI_S_15)

Interviewees perceived the effectiveness of the communication between the Case Management and the patient to be harmed when the patient has less trust in his Case Manager than in his physician. The way in which this disparity of trust affects the Case Management efforts and thus ties into the overall issue becomes apparent in situations where the Case Manager and the physician recommend different things. In such scenario, it is assumed that the patient is more likely to follow the advice of the person with whom the patient has a more trusting relationship.

"The physician has a special trusting relationship with the patients." – (SHI_S_03)

"If the physician advises someone [the patient] not to do something then that is a big barrier."- (SHI_S_17)

6.1.5 Cooperation between Stakeholders of Case Management

The perception of cooperation between stakeholders of Case Management was rather dissimilar among interviewees and we could not infer a prevalent issue. Thus we will only display differing statements.

The first statement perceived high interest in cooperation between the hospital and Case Management, whereby the high interest was justified by the hospital's interest in an optimal transition and coordination of the patient into the next care setting.

"[There is] no resistance [to cooperation] at all. A hospital has a generic interest in sending the patient with a clear conscience to out-patient care and Case Management improves the transition hereby." – (P_S_10)

The second statement argues that the cooperation between Case Management and physicians is difficult because physicians feel mostly offended when a Case Manager tries to coordinate the transition of the patient form one care setting to the other.

"Physicians feel their core competence is under attack." – (P_S_09)

The third statement positioned itself in between the previously described statements; as it describes the cooperation between the Case Management owner, the physicians and the hospitals in an assessing way. While the cooperation might often be satisfying, it can – with

equal possibility – convert into something difficult, because physicians and hospitals are perceived to have a negative opinion about Case Management.

> *„Cooperation with care physicians and hospitals is in general good. Sometimes it is difficult with physicians because they find it stupid."– (SHI_EX_06)*

Another perception also showed to be ambivalent. On the one hand, the cooperation between the Case Management and the physicians is difficult because physicians fear losing control. On the other hand, the cooperation is not difficult for the individual Case Manager who shares the same professional background with the physicians or physicians' assistants and knows the setting.

> *"It [the cooperation] differs. Sometimes they eyeball us. They still believe it is about control. With in-patient care my advantage is that it is also my background, I know my stakeholders, and there I have absolutely no problems." – (SHI_EX_11)*

Eventually one could draw the cautious conclusion that the ones executing Case Management should be familiar with the stakeholders, especially with the physicians, in order to facilitate a slightly better cooperation.

> *"It [the cooperation] depends; it is a very heterogeneous field. It is helpful if one is able to overcome the speechlessness or the not-knowing-about-each-other." – (SHI_S_01)*

6.1.6 Incentives to Initiate or Engage in Case Management

The main issue in the context of incentives was the perceived weak commitment to the execution of the Case Management process in case of having no financial (or other) incentives for involved stakeholders.

Overall, our empiric results indicate that the reimbursement system for stakeholders of Case Management is troublesome to Case Management in general. In the current set-up of the German health care system, the stakeholders are differently compensated for their services, and the incentives are not actually aligned so that no shared interest in jointly treating a patient exists. Instead, interests among stakeholders compete with each other, constituting a major challenge to a process like Case Management, which is supposed to span and coordinate across stakeholders. The ones providing Case Management have to ensure a Case Management process that meets all stakeholders' interests. The term interest was hereby

described with both financial incentives and incentives with regard to content. However, financial incentives seemed more essential and stronger.

> *"Well it is troublesome to initiate and roll-out Case Management. You need to acquire the know-how. Then there is the classic problem of the health care system in which interests compete with each other." – (PHI_S_12)*

> *"Everybody optimizes; and in-patient care competes with out-patient care. There is no shared interest in jointly treating a patient within Case Management because of the competition." – (RI_EV_14)*

The question about the problem with the current satisfaction of the stakeholder's interests was discussed in more detail by our interviewees. Starting with the statutory health insurances as the stakeholder, interviewees pointed out that there is a lack of incentives for process optimization. Case Management was hereby understood as process optimization. Based on this we assume that an economic trigger for Case Management is missing, at least on the level of statutory health insurances.

> *"Something has to happen in order to incentivize that health insurances who invest in process optimization also benefit financially." – (SHI_S_02)*

Continuing with the physicians, their cooperation with Case Management and commitment to the process was perceived as being weak if incentives are lacking. Every performed service, for example the access to certain information, has to be compensated. While one interviewee approved this statement, another interviewee expressed understanding for the lack of cooperation because physicians have a tight schedule which does not allow for uncompensated services. The mentioned solution is perceived to be setting financial incentives. However, the design of a reasonable reimbursement system is not understood as an easy task.

> *"It is unfortunately like that. You first have to pay the physician money in order to gain access to certain information." – (SHI_S_04)*

> *"Physicians have a lot to do. Constantly somebody is calling them, (…) and then also the health insurance wants something." – (P_S_09)*

> *"We see the need for financial incentives for the cooperation between the physicians and us" – (SHI_S_01)*

"Yet, how to design a reasonable reimbursement system that fosters cooperation?" – (SHI_S_02)

Furthermore, the compensation, reimbursement or incentivizing showed to be especially harmed by the fact that Case Management services are currently not part of the catalogue of collective services of SHIs. This means care providers cannot charge for Case Management interventions and SHIs cannot pay for it within the context of collective contracts. This was perceived as harming the rate of adoption of Case Management services.

"One problem of the whole implementation is indeed, that the simple, on large scale rolled out Case Management is not rewarded and financed among the SHIs." – (RI_EV_14)

6.1.7 Contracts between Physicians and Case Management Owners

The repeatedly mentioned issue among interviewees was the insufficient ability to control the physicians involved in the Case Management process. Meaning that even in the presence of contracts between the physicians and the Case Management owner, the necessary compliance to the process cannot be controlled, leading to deflection from the designated Case Management process.

Across interviews the physicians, although contracted, do not necessarily follow the agreed Case Management process. According to health insurances, Case Management providers, and hospitals alike the physicians' commitment is perceived as being low, because physicians tend to have a very high opinion about their medical wisdom and often reject external guidelines and interventions. In this context, control of Case Management processes and non-compliance with Case Management processes was particularly mentioned among health insurances and Case Management advisors.

"Under no circumstances should one have doctors in the Case Management Call Center, because they autonomously decide everything based on their medical freedom of treatment. If one wants to follow certain, structured paths, one should employ caregivers who are used to abide by guidelines." – (P_S_10)

"[In case of a network of contracted doctors] there is indeed an incline in compliance, there is always one third leading, one-third kind of compliant, and one-third lagging behind." – (SHI_S_17)

6.2 Summary of Core Obstacles

From the above displayed results and the already identified main issues within each code (each code defined one problem field) we can conclude that these issues constitute the obstacles that were perceived by stakeholders as harming to the further implementation of Case Management. The obstacles are: the faulty selection within the code of identification, the data unavailability within the code data, the low participation within the code participation, the ineffective communication within the code trust, the weak commitment within the code incentives and the lack of control within the code contracts. At this point, we can already provide the answer to our main research question – what obstacles to further implementing Case Management are perceived by stakeholders of the German health care system.

We neglect to identify potential patterns within the obstacles because our purpose was to present a wide and nuanced picture of (all) obstacles perceived by stakeholder of Case Management, regardless of the position or institution they work for.

Code	Issue	Obstacle
Identification	A reimbursement system that rewards the ones selecting patients on a "per patient" basis. Thus, even the intentional selection of non-eligible patients is rewarded	Faulty selection
Data	Fragmented system and governmental restrictions constrain data availability and possibility of data usage	Data unavailability
Participation	Patients' rates of enrolment in Case Management programs were low	Low Participation
Trust	Lack of trust between patient and Case Manager / Case Management program troubles the effective communication/interaction	Ineffective communication
Cooperation	*[No prevailing issues identified]*	*[No prevailing obstacle identified]*
Incentives	Financial (and other) incentives for involved stakeholders are not part of the general system setup, resulting in a weak commitment to the execution of the Case Management process	Weak commitment
Contracts	Even with contracts between stakeholders and physicians the necessary compliance to the process cannot be controlled leading to deflection from the designated Case Management process	No control over physicians

Table 10: Summary of Empirics

7 Analysis

In this chapter we present the theoretical analysis of our empirical results. We build the bridge between the previously identified obstacles to our theoretical framework and later on to the generic Case Management process. By relating practice to theory we can explain two areas of inquiry: (1) the relation of obstacles to the conceptualization of Case Management from the Operations Management perspective and (2) the effects on the generic Case Management process. Hence, we provide the answer to our second and third research question.

7.1 Analysis of Core Obstacles' Relation to Theory

In figure 14 we illustrate our theoretical framework (column 1 and 2 of the table below) and perceived obstacles (first row). As thoroughly explained in chapter 4, our framework merges the causal relations that have been established in the Variation Management concept with the five principles of Lean Thinking. The analysis follows the vertical order of obstacles and identifies to which area/areas of the theoretical framework each obstacle relates.

Variable / Principle	Characteristics & Success Factors	Matching the empiric findings (i.e. obstacles) with the theoretical framework ✓= match ✗= no match						
		Faulty selection	Data unavailability	Low Participation	Ineffective communication	[No prevailing issues identified]	Weak commitment	No control over physicians
(0) Variation Reduction	▪ Understand causes of Variation ▪ Define criteria of causes ▪ Use SPC methods to identify and group outliers							
(1) Specify Value	▪ Patient as customer ▪ Medical quality ▪ Accessibility ▪ Comfort of treatment							
(2) Identify the value stream	▪ Mapping the process ▪ Understand the behavior of the process ▪ Accessibility ▪ Interaction with and between the health care organizations ▪ Patient participation							
(3) Flow	▪ Smooth flow through the process Monitoring the patient ▪ Sector crossing approach to ▪ guidance							
(4) Pull	▪ Service cannot be inventoried ▪ Systems pulls-in the patient ▪ Service is delivered upon request by the system							
(5) Perfection	▪ Prevent medical failure from lack of knowledge or lack of attention Set ambitious targets ▪ Control the process ▪ Seek continuous improvement ▪ Incentivize People correctly ▪							

Figure 14: Relating Obstacles to Theory (concept)

7.1.1 Faulty Selection

This first issue describes the interviewees' concerns around a reimbursement system that rewards the ones selecting patients on a "per patient" basis. Thus, even the intentional selection of non-eligible patients is rewarded. This was brought to our attention by statements such as:

> *"External providers, e.g. telemedicine providers, sometimes acquire more patients than necessary because they are paid per participant." – (SHI_S_04)*

Setting this issue into the context of our theoretical framework we find a tie between the theoretical characteristics of what should be done in order to reduce variation (*variation reduction)* and what our empirical research said about why "per patient" reimbursement is harming the implementation of Case Management.

The first area of our framework defines that one should reduce variation in demand among patients because it harms the efficiency of operations (McLaughlin, 1996; Modig & Ahlstrom, 2012). In order to reduce the variation the first step is to understand what accounts for variation in demand (Benneyan & Kaminsky, 1995). Hereby, statistical models can identify what accounts for variation in demand (e.g. age, diagnosis, sex in health care) and reduce the variation by separating and grouping the outliers together along shared criteria (James, 2005).

In practice, we found that these criteria can be identified, thus what Benneyan & Kaminsky (1995) define as understanding is realized. However, the variation reduction is, unlike in theory, not performed by a statistical model that is assumed to act in full compliance with the criteria, but by human beings.

In our situation these human beings were compensated on a per-patient basis and also the fact that human beings often have different interpretations of criteria accounts for the fact that the variation is only partially reduced. Instead a faulty selection of patients takes place.

We thus position the issue of faulty selection in the first area of our theoretical framework, namely *(0) variation reduction*.

7.1.2 Data Unavailability

The second issue to analyze relates to the fragmented system and governmental restrictions, which are constraining data availability and the possibility of data usage.

The fragmented and unconnected system (for example no electronic patient record) is making it difficult to keep track of the patients' information and to ensure the smooth transition between the patients' different care settings, e.g. from one physician to the other. Moreover, the issues resulting from governmental data protection laws have also been mentioned as strongly constraining Case Management activities:

> *"There is an increasing fragmentation of care. Especially, in case of multi-morbidity it is difficult when nobody has the overview and reverse-medication or double-medication occurs." – (RI_EV_14)*

> *"If one tries to roll out Case Management, things such as data protection laws are limiting the possibilities." – (SHI_S_04)*

In mirroring the above-mentioned against our theoretical framework, we see two areas at which theory and practice are interrelated.

1. Variation Reduction
2. Flow

First, in recommending SPC methods to *variation reduction* James (2005) assumes that all required data is available for the ones performing the identification of variation. In practice, the fragmented health care system, the absence of an electronic patient record, and the strict data protection laws constituted constraining factors to successfully reducing variation. Thus, our result ties into the assumption in theory.

Second, J.P. Womack & Jones (2005) suggest to create a smooth *flow* by focusing on and monitoring the flow unit. Kollberg et al. (2007) add the importance of a sector crossing approach to guiding the flow unit and hereby highlight the necessity to make information transparent. Therefore the practical issue of being restricted or legally prohibited, to access data about patients' health care track record is hindering the possibilities to support a smooth flow for the patient among the care providers. In both the relation to the first area of *variation reduction* and the second of *flow* our results indicate that theoretical assumptions or propositions are not fulfilled.

7.1.3 Low Participation

The obstacle is built around the code *participation* and lead to the finding that patients' rates of enrolment in Case Management programs were low. Hereby we identified three scenarios

in which Case Management was differently implemented, accounting for varying (low) participation rates. These are displayed below:

1. Case Management programs for which the patient has to sign an agreement which grants the Case Management owner full access and the permission to share all of his medical records have significantly lower participation rates than programs for which the patient does not have to sign such an agreement.
2. The patient's willingness to participate depends on his or her medical condition at the time of being offered to participate. Thus, offering the Case Management in the very moment the patient feels in need would result in higher participation rates and vice versa.
3. Case Management often involves visiting physicians that are part of a specific network. If a required of physicians or other care providers is required, the participation rate is impacted negatively.

These statements are reconfirming those findings, which many of our interviewees brought up in a similar way.

> *"It depends. If we [Case Management service firm] call the potential participant a second time, I would say [the participation rate will be] 10%." – (P_S_09)*

> *"It is extremely difficult to get the patients in the very moment where it would be most important to enroll them in a Case Management program, because they do not care when they have no immediate pain." – (SHI_S_03)*

When considering how the perceived obstacle of low participation is linked to the theoretical framework, we found a link with the *specify value* principle. The central characteristic of this principle is taking the patient focus when defining the main values of the service (Womack & Jonas, 2003). In relation to implementing a Case Management program, theory demands to consider the customer perspective in order to implement an offering that is both accepted and effective.

Hereby, theory provides an explanation for the generally low and differing participation rates because Case Management providers followed the principle of specifying value to different extents and kept the patient's need of comfort not necessarily in mind (Kollberg et al., 2007).

7.1.4 Ineffective Communication

Derived from the *trust* code, this obstacle is concerning the lack of trust between the patient and the Case Manager or the Case Management program, which results in an ineffective communication and interaction.

Several interviewees have pointed out the importance of trust as a foundation for an effective communication, for example:

> *"We found it [the communication between the Case Manager and the patient] to be effective in most cases when we call the insurant [patient] several times. Then there is a basis of trust and patients are even happy if we call and talk honestly with us." – (P_S_09)*

Further supporting this view is the following statement which resembles the opinion of many interviewees:

> *"After a while when you have built trust it is as if you know each other personally and you start sharing a lot with each other." – (PHI_S_12)*

In matching the issue of having ineffective communication as a result of a lack of trust with our theoretical framework, it becomes apparent that communication is a vital foundation in several of the areas of our theoretical framework.

First of all, the obstacle is related to the *specify value* principle, which is relying on defining value from the patient perspective (J.P. Womack & Jones, 2003). In the case of Case Management the value definition is partially done together with the patient because one cannot take a patient's perspective without consulting the patient. Therefore, lacking trust and a thereby hampered communication will potentially result in making suboptimal decisions about what is the core value for the patient.

The second area, where a lack of trust impacts theory is in the *pull* step. We refined J.P. Womack & Jones, (2003)'s principle of producing services upstream when the customer downstream asks for it and suggested that the principle is to pull the customer in the right care setting in time. Here the Case Management is heavily relying on patient information. Similar to the *specify value* principle, the Case Management efforts might be compromised if communication between the patient and the Case Manager is ineffective.

Thirdly, striving for *perfection* and continuously improving the process is considered one of the central principles in any service process setup (J.P. Womack & Jones, 2003). Given that

Case Management is an interactive process between the customer (patient) and the service provider (Case Manager / Case Management program) it is evident that improvement can only be achieved in cooperation with the customer, which in turn is based on having a trustworthy and efficient communication.

Concluding the relation of the obstacle of ineffective communication to the three areas outlined above. Trust is one of the most central topics. However, we did not find that the theoretical framework explains or at least considers the obstacle at hand.

7.1.5 Weak Commitment

The code incentives has brought this obstacle to our attention, because interviewees mentioned that financial (and other) incentives for involved stakeholders are not sufficient, resulting in a weak commitment towards the execution of the Case Management process. This finding is supported by quotes such as the two below:

> *"Something has to happen in order to incentivize that health insurances who invest in process optimization also benefit financially." – (SHI_S_02)*

> *"We see the need for and set a financial incentives for the cooperation between the doctors and us" – (SHI_S_01)*

Setting this finding into the context of our theoretical framework, we have to follow the principles all the way to the area of *flow* to recognize how this obstacle could relate to the theoretical setup. J.P. Womack & Jones (2003) stress that the *flow* principle is based on the idea of enabling a smooth flow through the service process (i.e. the health care system). Overcoming organizational boundaries by taking an approach that spans across all sectors of the system becomes crucial (Kollberg et al., 2007). Hence, our theory for the implementation of services requires the stakeholders' unconstrained commitment to the designated process. Our results indicate that the theoretical propositions can only be ensured if all involved stakeholders are incentivized properly.

Taking a further look at the theoretical framework, we also observed that the obstacle of weak commitment relates to the area of *perfection*. Striving for perfection is, among others, based on motivation for improvement (Kollberg et al., 2007). Hence, insufficient or inadequate incentives will impact the motivation to reach perfection.

7.1.6 No Control over Physicians

In sorting the results within the code *contracts* according to what our interviewees emphasized, we found that even with official contracts between Case Management providers and physicians the necessary compliance to the process cannot be controlled, which is leading to deflection from the designated Case Management process. This became evident from quotes such as:

> *"There [network of contracted doctors] is indeed an incline in compliance, there is always one third leading, one-third kind of compliant, and one-third lagging behind." – (SHI_S_17)*

When looking at the points of implementing a service process where theory requires a high level of compliance from contracted stakeholders towards the designated process and the initiator, we find two areas, namely, the *flow* principle as well as the *perfection* principle. Hereby, the obstacle of not having control over physicians relates to the exact same areas as the previously analyzed obstacle of weak commitment.

As outlined earlier, the area of *flow* proposes the sector crossing approach of guidance as the basic characteristic of creating a smooth flow (Kollberg et al., 2007; J.P. Womack & Jones, 2003). Translating theory to practice, when physicians are involved in the execution of Case Management, it is crucial that all of them act in compliance to the defined flow plan. What sounds simple in theory is in practice harmed by the deflection of physicians.

The second area impacted by the uncontrollability of physicians and the resulting low compliance is the *perfection* principle. Within this principle, theory proposes that perfection requires the control of the process, next to having ambitious targets (Kollberg et al., 2007). At this point our results pose a question mark, because we found the physicians to be perceived uncontrollable even in the presence of contracts.

7.2 Summary of the Relation between Obstacles and Theory

Variable / Principle	Characteristics & Success Factors	Faulty selection	Data unavailability	Low Participation	Ineffective communication	[No prevailing issues identified]	Weak commitment	No control over physicians
		Matching the empiric findings (i.e. obstacles) with the theoretical framework ✓ = match ✗ = no match						
(0) Variation Reduction	▪ Understand causes of Variation ▪ Define criteria of causes ▪ Use SPC methods to identify and group outliers	✓	✓	✗	✗	✗	✗	✗
(1) Specify Value	▪ Patient as customer ▪ Medical quality ▪ Accessibility ▪ Comfort of treatment	✗	✗	✓	✓	✗	✗	✗
(2) Identify the value stream	▪ Mapping the process ▪ Understand the behavior of the process ▪ Accessibility ▪ Interaction with and between the health care organizations ▪ Patient participation	✗	✗	✗	✗	✗	✗	✗
(3) Flow	▪ Smooth flow through the process Monitoring the patient ▪ Sector crossing approach to ▪ guidance	✗	✓	✗	✗	✗	✓	✓
(4) Pull	▪ Service cannot be inventoried ▪ Systems pulls-in the patient ▪ Service is delivered upon request by the system	✗	✗	✗	✓	✗	✗	✗
(5) Perfection	▪ Prevent medical failure from lack of knowledge or lack of attention Set ambitious targets ▪ Control the process ▪ Seek continuous improvement ▪ Incentivize People correctly ▪	✗	✗	✗	✓	✗	✓	✓

Figure 15: Relating Obstacles to Theory

7.3 Obstacles' Effect on the Case Management Process

Through the identification of main obstacles presented in chapter 6 and subsequent theoretical analysis it was possible to pinpoint the perception of prevailing obstacles to further implementing Case Management in the German health care system.

Thereby, we achieved to answer our first and main research question – which obstacles of further implementing Case Management in Germany are perceived by stakeholders of Case Management in the German health care system.

Having matched the obstacles with our underlying theoretical framework has validated their impact on a theoretical service process setting. However, we have not yet analyzed which steps of the conceptual Case Management process will be affected by these obstacles.

By building the bridge between our discovered obstacles, the theoretical framework and the Case Management process, we combine the findings with theory and practice and thus enable an extension of theoretical concepts as well as practical insights for the potential Case Management practitioner or Case Management program owner.

As can be seen below and to simplify the understanding, we integrated all three variables in the table which we had been using before.

Case Management Process		Theoretical Framework	Results / Obstacles					
			Intentional faulty selection	Data unavailability	Low Participation	Ineffective communication	Weak commitment	No control over physicians
Process Step	**Action**	**Variable / Principle**	**Matching the empiric findings (i.e. issues) with the theoretical framework**					
Step ①	(a) Outreach (b) Screening	(0) Variation Reduction	✓	✓	✗	✗	✗	✗
Step ②	Assessment	(1) Specify Value	✗	✗	✓	✓	✗	✗
Step ③	Planning	(2) Identify the value stream	✗	✗	✗	✗	✗	✗
Step ④	Implementation/ Moitoring	(3) Flow	✗	✓	✗	✗	✓	✓
		(4) Pull	✗	✗	✗	✓	✗	✗
Step ⑤	Evaluation	(5) Perfection	✗	✗	✗	✓	✓	✓
Step ⑥	(a) Accountability (b) Reasessment							

Figure 16: Obstacles, Theory and the Case Management Process

7.3.1 Outreach / Screening

The first step of the Case Management process, the outreach and screening, will be impacted by two of the acknowledged obstacles. That is to say the faulty selection and the data unavailability. It seems obvious that selecting the wrong patients into the Case Management process is not only harming the process itself but also hindering an effective variation reduction. Considering the issue of data unavailability, things become more complicated. To be more specific, the data issue is not about faulty behavior or inappropriate reimbursement schemes which are impairing the process of selection, but about a real obstacle which is considerable preventing the outreach and screening process.

7.3.2 Assessment

The second step about the assessment of identified patients is also obstructed by two of the identified obstacles. However, they are of different nature compared to the first process step. At this point, the process might be compromised by the issue of low participation as well as ineffective communication. As previously defined and analyzed, this step is about setting the values for the program from the customers' (i.e. the patients') point of view. Firstly, this is taking place when outlining the Case Management program and setting the general conditions of the program. Therefore, the findings around the low participation rate give valuable clues about considerations that should be made about when and how to approach the patient. Secondly, taking the patients' point of view is done in close interaction with the patient. This is where the issue of ineffective communication hampers the assessment process. Given that we identified this obstacle through analyzing the *trust* code, we can derive that a trusting relationship is supporting the interactive part of the assessment process.

7.3.3 Planning

Following the process chronologically brings us to the Case Management process step about planning. Our analysis showed no impact from any of the prevailing obstacles. This however, does not necessarily mean that there are no issues with the planning process, but that further investigations would be necessary in order to make conclusive statements about this process step.

7.3.4 Implementation / Monitoring

The implementation and monitoring process is resembled by two theoretical principles and affected by four of the six obstacles. Firstly, the data unavailability is affecting the process because continuous patient data is necessary in order to assure close monitoring and successful implementation of the previously designed care plan. Further, the issues of weak commitment and lack of control over physicians can be regarded as one impact, because of its similar nature. Both result in obstacles because of not having fully committed stakeholders involved in the execution of the Case Management process, which clearly calls for a revision of incentives for involved stakeholders. Lastly, the ineffective communication as a result of a lack of trust is also impacting the possibilities of a smooth flow and a close monitoring because information from the patient has to be shared honestly with the Case Manager and in a timely manner.

7.3.5 Evaluation & Accountability / Reassessment

We decided to take the 5th and the 6th step of the Case Management process together, because not only is it being related to one theoretical principle but also the identified obstacles are impacting both steps simultaneously. Firstly, it is the issues of ineffective communication which hampers the evaluation of the program, because also in this step, interaction and information exchange between the patient and the Case Manager or Case Management owner is important to be reliable. This is also crucial when reassessing the patient's situation in order to decide how to proceed further. The evaluation and the reassessment is also done in interaction with involved stakeholders such as attending physicians, thus similar to the 4th process step discussed above, also at in this process step it is viable to combine the issues of weak commitment and lack of control over physicians under the common obstacle of not having fully committed stakeholders.

7.3.6 Summarizing the Impact of Obstacles' on the Case Management Process

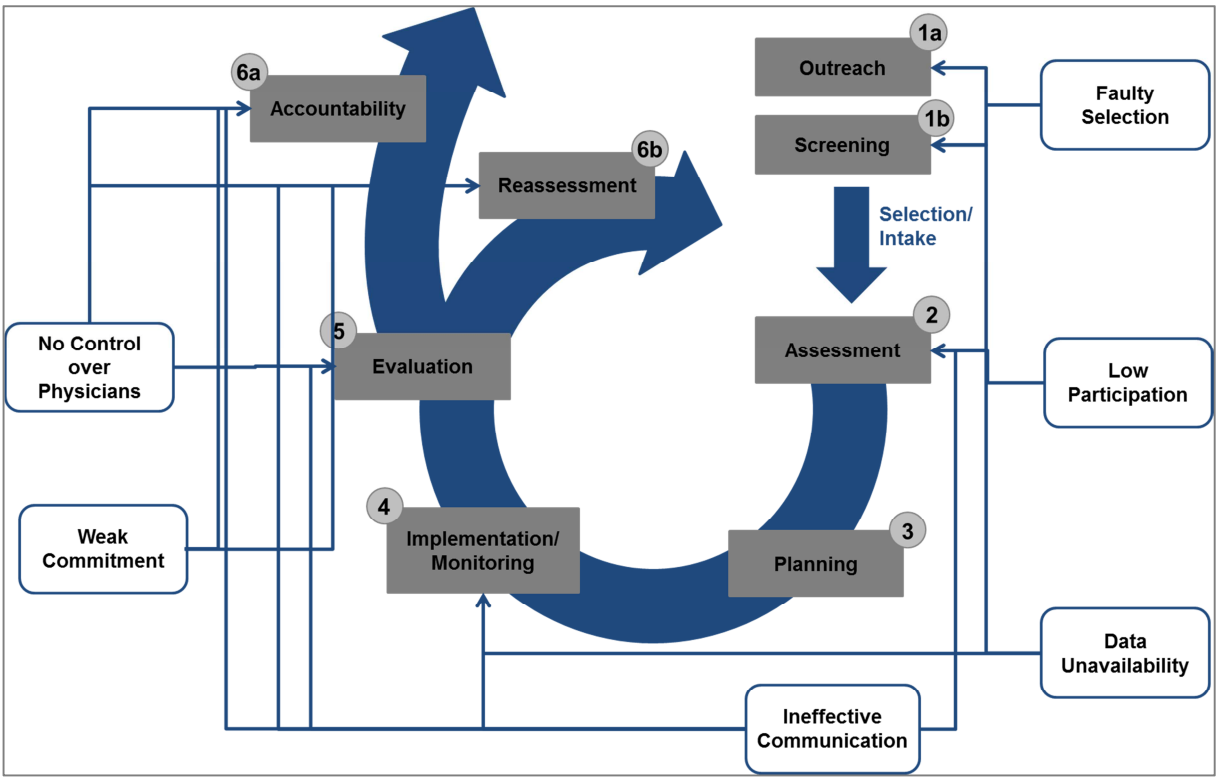


Figure 17: Obstacles' Impact on the Case Management Process

8 Discussion

In this chapter we discuss our findings in the light of the three research questions posed. We structure our discussion along the expectancy, the explanatory power and the generalizability of the findings. Before starting off, we will reiterate our research problem as well as the three research questions.

8.1 Reiteration of the Research Problem

The observation that Case Management in Germany is provided by various institutions but has in total not fulfilled its potential was the starting problem of our research. We assumed that obstacles are harming the further implementation of Case Management, and subsequently aimed to explore how different stakeholders perceive the subject. In order to account for a wide range of perspectives, we conducted a total of 24 semi-structured expert interviews within the field of Case Management. From the theoretical perspective our study was intended to identify if Case Management is a valuable conceptualization of Variation Management and Lean Thinking within health care, and how the practical obstacles relate to the conceptualization. Ultimately, our study aimed to extend the validity and explanatory power of the practical Case Management process model, which is based on Wendt (2005) and Gursansky et al. (2003).

Q1: Which obstacles of further implementing Case Management in Germany are perceived by stakeholders of Case Management in the German health care system?

Q2: Taking an Operations Management perspective, how do such obstacles relate to our theoretical framework of Case Management?

Q3: How do such obstacles affect the generic Case Management process model?

8.2 Findings to our Research Questions

In our empirical inquiry we found that relevant stakeholders perceived six main obstacles to further implementing Case Management in Germany as summarized in section 6.2. While this already answered the main research question, it was necessary to relate these findings to our theoretical framework and the generic Case Management process model in order to identify the overlap between our findings, the theoretical framework and the conceptual model. Thereby, each of the three research questions could be answered and will be discussed in more detail in the sections below.

Matching the obstacles with our underlying theoretical framework validated their impact on a theoretical service process setting as thoroughly analyzed in the previous chapter and summarized in section 7.2. While the obstacle of low participation could be fully explained by theory, we found that the remaining five obstacles (faulty selection, data unavailability, ineffective communication, weak commitment, and no control) relate to our framework, but are not considered in detail.

Moreover, we found a significant impact of the obstacles on all steps of the generic process model except the planning step (see section 7.3). This might be due to the fact that planning predominantly takes place in-house, where little interaction with stakeholders is required. Overall, we found that in both the theoretical conceptualization and the generic process model, all steps that were affected also relate to the interaction between the service/Case Management owner and the flow unit/patient or the "assembling" partners/physicians respectively. We argue that this finding suggests engaging in in-depth studies, which explicitly research the interaction between stakeholders involved.

In the following we discuss to what extent our obstacles came expected or could have been anticipated. For this discussion, we consider the insights of previous research studies, our theoretical framework, and the background knowledge. Furthermore, we investigate the explanatory power of our findings in regard to our practical observation outlined in the beginning of the thesis, and examine the generalizability of our findings.

8.3 Obstacles to the Implementation of Case Management

One distinct finding ranks around the unavailability of patient data which is necessary to reach out to the eligible patients and to subsequently monitor the patients in order to have a smooth flow through the health care system (i.e. the Case Management process). This issue is new in the sense that it has not been clearly pointed out by the reviewed empirical work presented in chapter 3. However, giving the high dependence on data that becomes apparent in Wendt (2005)'s Case Management intervention and the strict data protection laws in Germany, we did expect to find the availability of data as being problematic. Similarly, many areas of our theoretical framework build on having information available. James, (2005)'s methods that enable to identify variation among a group of patients and subsequently reduce the variation by grouping and defining separate processes fails with data being unavailable. In this sense, data constraints significantly impact the ability to apply what has been acknowledged in theory. Explained in more detail in section 7.3.1, Wendt (2005)'s process model becomes almost ineffective if data to identify and reduce variation is missing.

Considering the major difficulties with data in practice, we propose the study of settings that have managed to overcome data constraints by a refined process setup.

In our next, rather expected finding of ineffective communication, we specify that in the context of implementing Case Management, the communication was perceived ineffective when the patient mistrusts the intervention. Why should and would Mr. Fox – our example patient who was introduced in the beginning – engage in an all-encompassing and honest communication with his Case Manager, when he has no trust in the effectiveness of the intervention or the competence of his Case Manager. And vice versa, how can Mr. Fox's Case Manager assess the situation, monitor and in the right moment "pull" (as suggested by Womack & Jones, (2003)) Mr. Fox in the appropriate care setting without detailed and correct information. Literature has acknowledged the importance of trust in several ways. For example Gensichen et al. (2012) found "trust in the provider" to be a precondition and general limitation of Case Management. We could define where our finding relates to our theoretical framework but did not find the issue explained or considered by theory. However, the operational perspective implies that our concepts base on simple behavioral assumption of total determinable and predictable action, (Boudreau et al., 2003); assumptions that are questionable in regard to our empirical findings.

In this context we argue for an evidence-based re-definition of assumptions made in Operations Management that accounts for behavioral aspects. To date, this has largely been neglected in operational theory, even though it might enlarge the explanatory power and contribution to practice.

Eventually our next finding confirmed that the implementation of Case Management is harmed by the weak commitment of stakeholders', resulting from absence of financial (and other) incentives. With this finding, we are in line with Peters-Klimm et al. (2009) and Norris et al. (2002), who came to the same conclusion regarding the importance of reimbursement of physicians. However, we contradict the work of Roggenkamp et al. (2005) who argues that – in the context of adopting Case Management – stakeholders were barely influenced by rational assumptions about the cost-effectiveness. Thus, even if the finding implies that the economic pressure on stakeholders is not high enough to fully commit to Case Management as Roggenkamp et al. (2005) proposed, we cannot with certainty infer that from the interviews. Weak commitment being an issue was further anticipated because the theoretical framework depends on the commitment of the many stakeholders involved, especially in the areas of *flow* and *perfection*. In elaborating on creating a smooth flow and controlling the

process for perfection, theory does not provide specific terms on how that can be achieved. Our investigation of practice shows that in implementing a process that relies on the commitment of various stakeholders, all of them have to be fairly compensated. We argue that our finding extends the existing work about the service process principles of J.P. Womack & Jones (2003).

We see a direct relation to the last obstacle of no control over physicians, both in content and effect on the theoretical framework and the Case Management process alike. The two obstacles *weak commitment* and *no control over physicians* tie into the exact same areas of our theoretical framework. No other issues have such similar relations to the framework. We consequently decided to discuss them under one finding.

Within the obstacle of *no control over physicians* we found that Case Management providers criticized the uncontrollability of the physicians that can partially be improved by setting up a contractual agreement. Interviewees stressed physicians' nature as medical professionals, which accounts for deviating from the designated Case Management process. Hereby, not even contracts ensure a high compliance. It is certainly known that "developing new delivery systems and establishing effective provider relationships" is challenging (Kodner & Kyriacou, 2000). However, the specifics that derive from the supply chain partners being professionals might require special attention. As is the case within the obstacle of *weak commitment,* the linkage to the theoretical framework exists but theory does not explicitly explain the obstacle. Thus, the finding complements theory and in particular our theoretical framework.

8.3.1 Unexpected Findings

Firstly, a new discovery is the finding around the fact that the identification of eligible patients in step one of the Case Management process is perceived as flawed. The obstacle exists because the ones identifying the patients are reimbursed on a per-patient basis and are thus sometimes identifying more patients than the Case Management provider considers reasonable based on some pre-defined criteria. This finding was certainly unexpected, since neither literature nor theory provided a previously recognizable hint towards having too many ineligible patients enrolled as a consequence of a flawed identification step. The notion of having too many ineligible patients enrolled even contradicts Steinman et al. (2012) who found that an extensive list of exclusion criteria accounts for "more about screening out than screening in". It further differs from Steinman et al. (2012) who found screening mechanisms to be perceived by Case Managers as inaccurately identifying eligible patients. Our differing findings could be explainable by the fact that Steinman et al. (2012) looked at a specific

home-based Case Management program. In relation to theory, the obstacle can be explained by the fact that the assumption of total determinable and predictable action underlying operational concepts (Boudreau et al., 2003) is not fulfilled in this practical context.

We assume that, what has been elaborated before also applies in the context current at display: That is, the relevance of behavioral aspects in Operations Management. Especially in health care, where the patient's 'assembling' (i.e. treatment) process does not run within one organization but across providers who are largely unconnected and differently incentivized, this becomes crucial. Thus, this second finding which also seeks the integration of behavioral aspects in Operations Management theory strongly reinforces our suggestion made within the finding of ineffective communication.

Secondly, the low participation is one of the most interesting and likewise unforeseen findings. We learned that a substantial number of patients declined the offer of enrolling in a Case Management program. The insufficient acceptance and appreciation from the patients' side appear similarly in Gensichen et al. (2012) and Olbort et al. (2009), who found that patients perceive Case Management as "mechanical" and not "empathically". Reason enough for having a "poor motivation" as well as a negative attitude towards Case Management. Yet, none of them revealed the significantly low participation measured upon the rate of enrolment. In this context a liable explanation is provided by the area of specifying the value from the patients' perspective (J.P. Womack & Jones, 2003). Arguing in line with Kollberg et al. (2007), the generally low participation rate can be related to implementing Case Management upon the patients' need of comfort and treatment to different extents.

This finding partly explains the observation, which was outlined in our introduction, that the current Case Management programs are rather small in their number of enrolled patients. Bearing in mind that the reasons for having low participation rates were recognized, a subsequent question about whether or not efforts are made to solve the problem should be raised. It could be that further implementing Case Management is not high enough on the agenda, although a considerable amount of studies proves its effectiveness in the German context, e.g. (Gensichen et al., 2006; Gensichen et al., 2009, 2011; Kainzinger et al., 2009; Klie, Frommelt, & Schneekloth, 2011). In any way, we suggest to start investigating the issue at hand. Hereby the field of change management and especially behavioral change theories could be a promising way to go. Not least since Enguidanos (2001) calls for more evidence-based research in health care interventions.

8.4 Explanatory Power of Findings

In presenting our findings regarding the obstacles to the further implementation of Case Management in Germany we provide the most comprehensive picture of perceived issues within our scope. Our thoughtful decision to approach the problem in an exploratory way and the purposeful sampling accounted for the nuanced understanding defined in the purpose of our study.

However, our final sample was dominated by health insurances and the findings could thus relate slightly more to the perspective of health insurances on the Case Management market in Germany. This might be the case, for the rather negative attitude towards physicians, which becomes apparent in the obstacle of having no control over physicians. Moreover, the perspective given by the obstacle of having a faulty selection might also be influenced by a tendency of having more interviewees from insurance companies.

We argue that our findings regarding the participation rate or the data availability strongly affect the further implementation of Case Management in Germany, but we cannot state the explanatory power of single findings or the entirety of findings. Thus, it is beyond the scope of our thesis to classify the extent to which our findings fully explain the observation that has lead us to conduct the research at hand. Our interpretivist paradigm acknowledges that more than one reality exists. This is why our interpretation of the reality of further implementing Case Management might not be endorsed or considered as comprehensive by other researchers.

8.5 Generalizability of Findings

In this part we want to distinguish between findings that one can generalize to Case Management implementation in other contexts than the German health care system and those that are specific for the German context.

First of all, the obstacle of ineffective communication, which was derived from a lack of trust is applicable to all settings of Case Management. That is because having a trusting interaction between the patient and the Case Manager is always a prerequisite to a successful implementation of Case Management.

When it comes to the obstacle of having low participation, we have to differentiate between the different causes for the low participation rate. The cause of approaching the patient when he or she does not feel the necessity for an intervention is applicable to any Case Management program. The other causes for the low participation rate are rather dependent on the kind on

specifics of how the Case Management program is setup and are thus not as easily applicable to a wider context.

The obstacle of having a faulty selection is only generalizable across different context in cases where the identification of potential patients is outsourced. Therefore, its generalizability does not depend on the geographic context (i.e. a specific health care system), but rather on the design and setup of the Case Management program.

As previously done in the discussion above, also at this point it makes sense to consider the obstacle of weak commitment and no control over physicians together. Those obstacles can be generalized and are applicable to any context as they are predominantly built around the issue of lacking incentives and flaws with reimbursement structures. Thus, it is a topic that is applicable to any setup of Case Management in any kind of health care system. However, it is enforced in the German context due to the high level of fragmentation of the German health care system and the conflicting incentives within it.

The last obstacle to take into consideration is about the limited data availability. While this is a very important issue within the German health care system, it is not as easily generalizable to other health care contexts. Since the obstacle is a consequence of the fact that the German health care system is not unified by a central electronic patient record and is also very constrained by strict data protection laws, it can be considered as an exclusive 'German' problem.

9 Conclusion

In this last chapter we recap how our study has evolved from the indication that further implementing Case Management in Germany is constrained, to not only the identification of perceived obstacles but also the analysis how these relate to the conceptual models proposed.

The starting point of our thesis was the valid indication that Case Management in Germany is far from reaching its full potential due to obstacles that are predominantly unexplored by empiric studies or related theoretical fields. We felt the need to target this gap and to contribute to the further implementation of Case Management in Germany using insights from both Variation Management and Lean Thinking.

In exploring the problem through a total of 24 qualitative interviews with experts in the field, we accounted for the variety of perspectives on Case Management and a solid explanatory power of our findings.

In the following we point out how these findings lead to our unique practical and theoretical contribution. Furthermore, we not only acknowledge natural limitations to our study, but also make recommendations for future research that could build on the basis which we have built for with our study.

9.1 Practical Contribution

Exploring the perception of Case Management enabled us to identify obstacles to further implementing Case Management in Germany. This marks a unique contribution with far-reaching impact. In revealing the main obstacles to the implementation of Case Management, our study offers practitioners from all stakeholders the opportunity to take a perspective that goes beyond their organizational boundaries.

In relating the obstacles not only to our theoretical framework of Variation Management and Lean Thinking but also to the generic process model (Gursansky et al., 2003; Wendt, 2005) we enabled the identification of a significant overlap and impact of obstacles on all process steps (except for the *planning* step). Most significantly, we found that Wendt (2005)'s process model becomes ineffective if data to identify and reduce variation is missing. Ultimately, we approved that Case Management can fulfill the identification, reduction, and management of variation, which is suggested by theory (Modig & Ahlstrom, 2012) and thus, increase the validity of the process.

9.2 Theoretical Contribution

Our study contributes to both Variation Management and Lean Thinking literature by exploring the applicability of Case Management from the perspective of an encompassing group of stakeholders, and by investigating the obstacles that mark a barrier to Case Management on a larger scale.

We found Case Management to be the practical equivalent to the combined concepts of Variation Management/Lean Thinking. In confirming the applicability of such theory, we introduce Case Management as researchable object. Moreover, we identified issues that relate to reducing variation and managing variation. Hereby we can extend theory with issues that occur in the context of the highly complex health care sector.

We affirm the work of Womack & Jones (2003), Kollberg et al. (2007) in terms of the emphasis they put on specifying value. The fact that only few eligible patients agree to enroll in Case Management directly relate to a lack of focus on the patient's value in the implementation of Case Management.

However we disagree with the behavioral assumptions underlying Womack & Jones (2003) and the concept of Variation Management. We found our obstacles largely related to process steps where the flawless interaction between stakeholders and the compliance of stakeholders would be crucial.

Overall our findings support the work of (Gensichen et al., 2012; Peters-Klimm et al., 2009), who already stressed the importance of trust and reimbursement in the context of implementing Case Management.

9.3 Limitations

Our study accounts for having identified the perceived obstacles to the implementation of Case Management in Germany and for introducing a practical Case Management model to the field of Operations Management. However, the explanatory power and generalizability of our findings are naturally limited in ways that we pointed out and discussed throughout our thesis. In conclusion, we acknowledge the following limitations to our findings:

Firstly, not all our findings are generalizable to other Case Management settings outside the German health care system. As discussed in the previous chapter, the obstacle of data unavailability derives from the high fragmentation of the German health care system and the overall strict data protection law, which cannot be assumed to be similar in other countries.

Secondly, due to our methodology (i.e. the interpretivist paradigm, the exploratory study approach, and the thematic analysis) our findings are naturally limited in objectivity. Although, our thoughtful application of methods account for a profound validation, the explanatory power is limited by the fact that we engaged in qualitative research.

Thirdly, the tenor of our findings might be biased by the fact that our sample was dominated by health insurances. The critical perception of physicians, which becomes apparent in the obstacle of having no control over physicians, as well as the obstacle of having a faulty selection can be related to having more interviewees from the insurance side.

9.4 Future Research

At the very end of our thesis, we want to suggest two areas which were brought up by our study and are worth considering for future research.

Firstly, we perceive our study to lay the ground for further in-depth studies on the frequency of appearance of the identified obstacles. Hereby, the focus should lie on investigating the perception of individual groups of stakeholders (e.g. health insurances only, hospitals only etc.) in order to see if and how results differ before starting to investigate potential solutions. Subsequent research about potential solutions might ultimately lead to the elimination of such obstacles.

Secondly, we advocate for revisiting the behavioral assumptions made in Variation Management and for integrating evidence of other fields, e.g. Behavioral Change Theory, Change Management or even psychology. Variation highly affects the performance of service processes, but the concept's current assumptions, which mostly derive from classic Operations Management (Bendoly, Donohue, & Schultz, 2006) fall short in accounting for the complexity inherent in practice (Boudreau et al., 2003). Our claim bases on finding the obstacles of *ineffective communication, low participation, and faulty selection* strongly related to behavioral aspects.

10 Bibliography

Angen, M. J. (2000). Evaluating Interpretive Inquiry: Reviewing the Validity Debate and Opening the Dialogue. *Qualitative Health Research*, *10*(3), 378–395

Association of PHI. (n.d.). Zahlen zur Privaten Krankenversicherung. Retrieved November 17, 2013, from http://www.pkv.de/zahlen/

Barnard, A., McCosker, H., & Gerber, R. (1999). Phenomenography: A Qualitative Research Approach for Exploring Understanding in Health Care. *Qualitative Health Research*, *9*(2), 212–226.

Bendoly, E., Donohue, K., & Schultz, K. L. (2006). Behavior in operations management: Assessing recent findings and revisiting old assumptions. *Journal of Operations Management*, *24*(6), 737–752.

Benneyan, J. C., & Kaminsky, F. C. (1995). Another view on how to measure health care quality. *Quality Progress*, *28*(2), 120–24.

Beske, F. (2011). Sechs Entwicklungslinien in Gesundheit und Pflege – Analyse und Lösungsansätze. Fritz Beske Institut für Gesundheits-System-Forschung Kiel.

BMG: Federal Ministry of Health. (2013a). Geschichte der gesetzlichen Krankenversicherung. Retrieved November 16, 2013, from http://www.bmg.bund.de/krankenversicherung/grundprinzipien/geschichte.html

BMG: Federal Ministry of Health. (2013b). Aufgaben und Organisation der GKV. Retrieved November 17, 2013, from http://www.bmg.bund.de/krankenversicherung/grundprinzipien/aufgaben-und-organisation-der-gkv.html

Boudreau, J., Hopp, W., McClain, J. O., & Thomas, L. J. (2003). On the Interface Between Operations and Human Resources Management. *Manufacturing & Service Operations Management*, *5*(3), 179–202. Retrieved from http://pubsonline.informs.org/doi/abs/10.1287/msom.5.3.179.16032

Bowen, D. E., & Youngdahl, W. E. (1998). "Lean" service: in defense of a production-line approach. *International Journal of Service Industry Management*, *9*(3), 207–225.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77–101.

Buffa, E. S. (1980). Research in Operations Management. *Journal of Operations Management*, *1*(1), 1–7.

Bump, J. B. (2010). The Long Road to Universal Health Coverage: A century of lessons for development strategy. *Rockefeller foundation*.

Cassell, C., Bishop, V., Symon, G., Johnson, P., & Buehring, A. (2009). Learning to be a Qualitative Management Researcher. *Management Learning*, *40*(5), 513–533.

CESifo Dice Report. (2010). *HOSPITAL PAYMENT SYSTEMS IN EUROPE* (pp. 59–60).

Cohen, S., Yu, W., Machlin, S., & Chevan, J. (2011). *The Concentration and Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2008-2009. Statistics Brief* (p. 354).

Cole, M. (2006). Using a motivational paradigm to improve handwashing compliance. *Nurse education in practice*, *6*(3), 156–62.

Coleman, E. A. (2003). Falling through the cracks: challenges and opportunities for improving transitional care for persons with continuous complex care needs. *Journal of the American Geriatrics Society*, *51*(4), 549–55.

Constas, M. A. (1992). Qualitative Analysis as a Public Event: The Documentation of Category Development Procedures. *American Educational Research Journal*, *29*(2), 253–266.

Coughlan, P., & Coghlan, D. (2002). Action research for operations management. *International Journal of Operations & Production Management*, *22*(2), 220–240.

Economist Intelligence Unit. (2013). *Industry Report Healthcare Germany*. London.

Enguidanos, S. (2001). Integrating behavior change theory into geriatric case management practice. *Home health care services quarterly*, *20*(1), 67–83.

Fuller, J. A., & Martinec, C. L. (2005). Operations Research and Operations Management : From Selective Optimization To System Optimization. *Journal of Business & Economics Research*, *3*(7), 11–16.

Gensichen, J, Beyer, M., Muth, C., Gerlach, F. M., Korff, M., & Ormel, J. (2006). Case management to improve major depression in primary health care: a systematic review. *Psychological medicine*, *36*(1), 7–14.

Gensichen, Jochen, Guethlin, C., Sarmand, N., Sivakumaran, D., Jäger, C., Mergenthal, K., … Petersen, J. J. (2012). Patients' perspectives on depression case management in general practice - a qualitative study. *Patient education and counseling*, *86*(1), 114–9.

Gensichen, Jochen, Korff, M. von, Peitz, M., Muth, C., Beyer, M., Torge, M., … Ko, J. (2009). Case Management for Depression by Health Care Assistants in Small Primary Care Practices A Cluster Randomized Trial. *Annals of Internal Medicine*, *151*(6), 369–378.

Gensichen, Jochen, Petersen, J. J., Karroum, T., Rauck, S., Ludman, E., König, J., & Gerlach, F. M. (2011). Positive impact of a family practice-based depression case management on patient's self-management. *General hospital psychiatry*, *33*(1), 23–8.

German Medical Association. (n.d.). The healthcare system in Germany. Retrieved November 14, 2013, from http://www.bundesaerztekammer.de/page.asp?his=4.3571

Greenhalgh, T., Glenn, R., Macfarlane, F., Bate, P., & Kyriakidou, O. (2005). Comment on "Diffusion of innovations in service organizations: systematic review and recommendations". *The Milbank quarterly*, *83*(1), 177–8; author reply 178–9.

Grönroos, C. (2007). *Service management and marketing: customer management in service competition* (3rd editio.). Wiley. com.

Guba, E. G. (1990). *The Paradigm Dialog*. New- bury Park, CA: SAGE Publications.

Guest, G., MacQueen, K. M., & Namey, E. E. (2012). *Applied Thematic Analysis*. SAGE Publications.

Gunasekaran, A., & Ngai, E. W. T. (2012). The future of operations management: An outlook and analysis. *International Journal of Production Economics*, *135*(2), 687–701.

Gursansky, D., Harvey, J., & Kennedy, R. (2003). *Case Management: Policy, Practice and Professional Business*. Columbia University Press.

Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partical Perspective. *Feminist studies*, *14*(3), 575–599.

Health Navigator. (2012). Consulting in the public sector.

Hébert, R., Tourigny, A., & Raîche, M. (2008). *Integration of services for disabled people: research leading to action*. EDISEM.

Heinemann, A., Baas, J. C., Peterseim, M., Kurth, T., & Ernst, S. (2008). *Versorgungsmanagement. Der strategische Zukunftstrend im deutschen Gesundheitsmarkt*.

Hines, P., Holweg, M., & Rich, N. (2004). Learning to evolve: A review of contemporary lean thinking. *International Journal of Operations & Production Management*, *24*(10), 994–1011.

James, C. (2005). Manufacturing's Prescription for Improving Healthcare Quality. *Hospital topics*, *83*(1), 2–8.

Jardine, D. W. (1990). Awakening from Descartes' nightmare: On the love of ambiguity in phenomenological approaches to education. *Studies in Philosophy and Education*, *10*(3), 211–232.

Jones, D., & Mitchell, A. (2007). Lean Thinking for the NHS. *NHS Confederation, London*, 51.

Kainzinger, F., Raible, C. a., Pietrek, K., Müller-Nordhorn, J., & Willich, S. N. (2009). Optimization of hospital stay through length-of-stay-oriented case management: an empirical study. *Journal of Public Health*, *17*(6), 395–400.

Karmarkar, U. S., & Apte, U. M. (2007). Operations management in the information economy: Information products, processes, and chains. *Journal of Operations Management*, *25*(2), 438–453.

Kielblock, B., Frye, C., Kottmair, S., Hudler, T., Siegmund-Schultze, E., & Middeke, M. (2007). [Impact of telemetric management on overall treatment costs and mortality rate among patients with chronic heart failure]. *Deutsche medizinische Wochenschrift (1946)*, *132*(9), 417–22.

Klie, T., Frommelt, M., & Schneekloth, U. (2011). *Evaluation der Pflegeberatung nach § 7a Abs. 7 Satz 1 SGB XI*. Berlin.

Kodner, D. L., & Kyriacou, C. K. (2000). Fully integrated care for frail elderly: two American models. *International journal of integrated care*, *1*, e08.

Kollberg, B., Dahlgaard, J. J., & Brehmer, P.-O. (2007). Measuring lean initiatives in health care services: issues and findings. *International Journal of Productivity and Performance Management*, *56*(1), 7–24.

Kotter, J. P. (1996). *Leading Change*. Boston: Harvard Business Press.

Kozinets, R. V. (2002). The Field Behind the Screen: Using Netnography for Marketing Research in Online Communities. *Journal of Marketing Research*, *39*(1), 61–72.

Kucukyazici, B., Verter, V., & Mayo, N. E. (2011). An Analytical Framework for Designing Community-Based Care for Chronic Diseases. *Production and Operations Management*, *20*(3), 474–488.

LaGanga, L. R. (2011). Lean service operations: Reflections and new directions for capacity expansion in outpatient clinics. *Journal of Operations Management*, *29*(5), 422–433.

Lisac, M., Reimers, L., Henke, K.-D., & Schlette, S. (2010). Access and choice--competition under the roof of solidarity in German health care: an analysis of health policy reforms since 2004. *Health Economics, Policy and Law*, *5*(1), 31.

Löcherbach, P. (2003). Einsatz der methode case management in Deutschland: Übersicht zur Praxis im Sozial-und Gesundheitswesen. *Neue Wege in der Nachsorge und Palliativversorgung. BetaInstitutsverlag*, 20–33.

Löcherbach, P., Klug, W., Wendt, W. R., & Remmel-Faßbender, R. (2002). *Case-Management: Fall- und Systemsteuerung in Theorie und Praxis*. Neuwied: Luchterhand.

Maykut, P., & Morehouse, R. (1994). *Beginning qualitative research: A philosophical and practical guide*. London: The Falmer Press.

McLaughlin, C. P. (1996). Why variation reduction is not everything: a new paradigm for service operations. *International Journal of Service Industry Management*, *7*(3), 17–30.

Merriam-Webster. (2013). Outpatient. Retrieved November 15, 2013, from http://www.merriam-webster.com/dictionary/outpatient

Miles, M. B., & Huberman, M. A. (1994). *Qualitative Data Analysis: An Expanded Source-book* (2nd ed.). Thousand Oaks, CA: SAGE Publications.

Modig, N., & Ahlstrom, P. (2012). *This is Lean: Resolving the Efficiency Paradox*. Rheologica.

Norris, S. L., Nichols, P. J., Caspersen, C. J., Glasgow, R. E., Engelgau, M. M., Jr, L. J., … Mcculloch, D. (2002). The Effectiveness of Disease and Case Management. *American Journal of Preventive Medicine*, *22*(02).

Obermann, K., Müller, P., Hans-Heiko, M., Schmidt, B., & Glazinski, B. (2013). Understanding the German Health Care System. *Mannheim Institute of Public Health*, *1*.

OECD. (2012). *Health at a Glance Europe 2012*.

Okin, R., Boccellari, A., & Azocar, F. (2000). The effects of clinical case management on hospital service use among ED frequent users. *The American journal of Emergency Medicine*, *18*(5), 603–608.

Olbort, R., Mahler, C., Campbell, S., Reuschenbach, B., Müller-Tasch, T., Szecsenyi, J., & Peters-Klimm, F. (2009). Doctors' assistants' views of case management to improve chronic heart failure care in general practice: a qualitative study. *Journal of advanced nursing*, *65*(4), 799–808.

Ouwens, M., Wollersheim, H., Hermens, R., Hulscher, M., & Grol, R. (2005). Integrated care programmes for chronically ill patients: a review of systematic reviews. *International journal for quality in health care*, *17*(2), 141–6.

Parker, G., Anderson, M. A., & Anderson, E. J. (2013). *Operations Management For Dummies*. John Wiley & Sons.

Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Newbury Park, CA: SAGE Publications.

Peters-Klimm, F., Olbort, R., Campbell, S., Mahler, C., Miksch, A., Baldauf, A., & Szecsenyi, J. (2009). Physicians' view of primary care-based case management for patients with heart failure: a qualitative study. *International journal for quality in health care*, *21*(5), 363–71.

Phillips, G. A., Brophy, D. S., Weiland, T. J., Chenhall, A. J., & Dent, A. W. (2006). The effect of multidisciplinary case management on selected outcomes for frequent attenders at an emergency department. *The Medical journal of Australia*, *184*(12), 602–6.

Piercy, N., & Rich, N. (2009). Lean transformation in the pure service environment: the case of the call service centre. *International Journal of Operations & Production Management*, *29*(1), 54–76.

Pope, C., & Mays, N. (2006). *Qualitative Research in Health Care* (3rd ed., p. 168). John Wiley & Sons.

Pope, D., Fernandes, C. M., Bouthillette, F., & Etherington, J. (2000). Frequent users of the emergency department: a program to improve care and reduce visits. *Canadian Medical Association Journal*, *162*(7), 1017–20.

Rabin, B. A., Brownson, R. C., Kerner, J. F., & Glasgow, R. E. (2006). Methodologic challenges in disseminating evidence-based interventions to promote physical activity. *American journal of preventive medicine*, *31*(4), 24–34.

Reinius, P., Johansson, M., Fjellner, A., Werr, J., Ohlén, G., & Edgren, G. (2012). A telephone-based case-management intervention reduces healthcare utilization for frequent emergency department visitors. *Eur J Emerg Med*, 1–8.

Rogers, E. M. (1995). *Diffusion of Innovations* (4th Editio.). New York: THE FREE PRESS.

Roggenkamp, S. D., White, K. R., & Bazzoli, G. J. (2005). Adoption of hospital case management: economic and institutional influences. *Social science & medicine (1982)*, *60*(11), 2489–500.

Rosen, A., & Teesson, M. (2001). Does case management work? The evidence and the abuse of evidence-based medicine. *The Australian and New Zealand journal of psychiatry*, *35*(6), 731–46.

Rosenheck, R. A. (2001). Organizational process: a missing link between research and practice. *Psychiatric services (Washington, D.C.)*, *52*(12), 1607–1612.

Salzarulo, P. a., Bretthauer, K. M., Côté, M. J., & Schultz, K. L. (2011). The Impact of Variability and Patient Information on Health Care System Performance. *Production and Operations Management*, *20*(6), 848–859.

Sandelowski, M. (1993). Rigor or rigor mortis: the problem of rigor in qualitative research revisited. *ANS. Advances in nursing science*, *16*(2), 1–8.

Scheel, D. O., Thiry, E., Schmidt-Rhode, C., & Berenbeck, M. (2011). *Deutsches Gesundheitssystem auf dem Prüfstand. Kostenfalle Komplexität*.

Seddon, J. (2005). *Freedom from Command and Control: A Better Way to Make the Work, Work; the Toyota System for Service Organisations* (2nd ed.). Buckingham: Vanguard Education.

Sheaff, R., Boaden, R., Sargent, P., Pickard, S., Gravelle, H., Parker, S., & Roland, M. (2009). Impacts of case management for frail elderly people: a qualitative study. *Journal of health services research & policy*, *14*(2), 88–95.

Shumway, M., Boccellari, A., O'Brien, K., & Okin, R. L. (2008). Cost-effectiveness of clinical case management for ED frequent users: results of a randomized trial. *The American journal of emergency medicine*, *26*(2), 155–64.

Silverman, D. (2013). *Doing Qualitative Research: A Practical Handbook* (p. 488). SAGE Publications Limited.

Slack, N., Chambers, S., & Johnston, R. (2006). *Operations Management* (4th ed., p. 760). Pearson Education.

Spillane, L., & Lumb, E. (1997). Frequent users of the emergency department: can we intervene? *Academic Emergency Medicine*, *4*(6), 574–80.

Staats, B. R., Brunner, D. J., & Upton, D. M. (2011). Lean principles, learning, and knowledge work: Evidence from a software services provider. *Journal of Operations Management*, *29*(5), 376–390.

Statistisches Bundesamt. (2013). *Grunddaten der Krankenhäuser 2012* (Vol. 2013). Wiesbaden.

Steinman, L., Cristofalo, M., & Snowden, M. (2012). Implementation of an evidence-based depression care management program (PEARLS): perspectives from staff and former clients. *Preventing chronic disease*, *9*.

Sun, B., Burstin, H., & Brennan, T. (2003). Predictors and Outcomes of Frequent Emergency Department Users. *Academic Emergency Medicine*, *10*(4), 320–328.

Sutherland, D., & Hayter, M. (2009). Structured review: evaluating the effectiveness of nurse case managers in improving health outcomes in three major chronic diseases. *Journal of clinical nursing*, *18*(21), 2978–92.

Thomas, D. R. (2005). A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, *27*(2), 237–246.

Thomson, S., Osborn, R., Squires, D., & Reed, S. (2012). *International Profiles of Health Care Systems 2012. New York: The Commonwealth Fund*. New York.

Vonderembse, M. a., Uppal, M., Huang, S. H., & Dismukes, J. P. (2006). Designing supply chains: Towards theory development. *International Journal of Production Economics*, *100*(2), 223–238.

Walley, P., Silvester, K., & Steyn, R. (2006). Managing variation in demand: lessons from the UK National Health Service. *Journal of Healthcare Management*, *51*(5), 309–320.

Wassmer, R., Winward, L., & Derlet, R. (2008). Does Counseling Reduce Frequent Emergency Department Use? *Available at SSRN 1093870*.

Weaver, K., & Olson, J. K. (2006). Understanding paradigms used for nursing research. *Journal of advanced nursing*, *53*(4), 459–69.

Wendt, W. R. (2001). *Case-Management im Sozial- und Gesundheitswesen: eine Einführung* (p. 240). Lambertus-Verlag.

Wendt, W. R. (2005). Case Management: ein Konzept , viele Anwendungen. *Managed Care*, *2*, 7–9.

Westbrook, R. (1995). Action research: a new paradigm for research in production and operations management. *International Journal of Operations & Production Management*, *15*(12), 6–20.

WHO. (2013). What is universal health coverage? Retrieved November 17, 2013, from http://www.who.int/features/qa/universal_health_coverage/en/

Womack, J.P., & Jones, D. T. (2003). *Lean Thinking: Banish Waste and Create Wealth in Your Corporation. Simon & Schuster, London*. New York: Free Press.

Womack, J.P., & Jones, D. T. (2005). Lean consumption. *Harvard business review*, *83*(3), 56–68.

Womack, James P., & Jones, D. (1996). *Lean Thinking: Banish Waste and Create Wealth in Your Corporation. Touchstone, London*. Touchstone.

Young, T., Brailsford, S., Connell, C., Davies, R., Harper, P., & Klein, J. H. (2004). Using industrial processes to improve patient care. *British Medical Journal*, *328*(7432), 162.

11 Appendix

11.1 Guiding Questions in German

Herzlichen Dank für die Unterstützung unserer Masterarbeit!

Zu Beginn: wir möchten keine Definition von Case Management vorwegnehmen, da wir an Ihrem Verständnis von Case Management und Ihrer möglichst unvoreingenommenen Meinung interessiert sind.

Wir gehen lediglich davon aus, dass die Gesamtheit aller Patienten nach Bedürfnissen, also nach (krankheitsbedingten) Leistungsansprüchen und dem entsprechenden Kostenaufwand gruppiert werden könnte. Hierbei liegt der Fokus unserer Masterarbeit primär auf der höchstverbrauchenden Patientengruppen. Weiterhin nehmen wir an, dass man für diese höchstverbrauchende Patientengruppen Prozesse entwickeln könnte, z.B. Case Management.

Zu den Fragen:

1. Bitte beschreiben Sie doch einmal „Ihr" Case Management
    a. Was ist der genaue Prozess?
    b. Für wen ist es?
    c. Wann greift es und für wie lange?
    d. Welche gesetzlichen Grundlagen müssen beachtet werden?
    e. Wie ist es organisiert?
    f. Wie kam es eigentlich, dass es initiiert wurde?
    g. Welche Erfahrungen haben Sie damit bisher gemacht?
    h. Welche Herausforderungen sehen Sie?
2. Was halten Sie von einer Analyse wie eingangs beschrieben, die Patienten gruppiert, und dem Aufbau entsprechender Prozesse?
3. Fällt Ihnen sonst noch etwas dazu ein, was bei Ihnen im Unternehmen gemacht wird um Patienten in Bedürfnis-Gruppen einzuteilen und separat zu betreuen?
4. Fällt Ihnen sonst noch etwas zu präventiven Programmen ein, die Patientenversorgung verbessert und finanzielle Vorteile erzielt?
5. Wenn es Ziel eines Case Managements ist, die Behandlung und Pflege des Patienten zu koordinieren, den Patienten zu motivieren, die Lebensqualität des Patienten zu erhöhen und dabei die Kosten zu senken. Was spricht dafür, dass sich Case Management in Deutschland verbreitet, was spricht dagegen?
6. Was denken Sie über folgende Aspekte im Bezug auf ein flächendeckendes Case Management in Deutschland?:
    a. Zugang und Nutzung von Patientendaten zwecks Gruppierung und Betreuung
    b. Bezahlsystem im deutschen Gesundheitssystem
    c. Incentivierung der verschiedenen Akteure des Gesundheitssystems
    d. Rolle des Gesetzgebers

11.2 Guiding Questions Translated to English

Thank You Very Much for Supporting our Master's Thesis.

To begin with, we do not want to preempt a definition of Case Management, because we are interested in your unbiased understanding of it.

We solely assume that the entirety of all patients could be grouped into different needs, thus into different entitlement to benefits (caused by illness) and the corresponding expenditures. Therefore, the focus of the Master's thesis at hand primarily lies on the highest consuming group of patients.

Further, we assume that one could develop processes like for example Case Management, for this highest consuming group of patients.

Our guiding questions are:

1. Please describe your Case Management
    a. How would you describe the exact process?
    b. For whom is it intended?
    c. When does it set in and for how long?
    d. What legal grounds need to be considered?
    e. In what way is it organized?
    f. On what basis was it initiated?
    g. What effects have you been experiencing until now?
    h. What challenges did you have?
2. What do you think about an analysis as described in the beginning, that groups patients according to the composition of correspondent processes?
3. Can you think of another process that is pursued in your company in order to arrange patients into needs-related groups and to manage them separately?
4. Can you think of anything else regarding preventive programs that improve patient care and attain financial benefits?
5. In case the aim of a Case Management is to coordinate the treatment and care of the patient, to motivate the patient to improve the patient's quality of life and at the same time to lower the costs, what speaks for the spread of Case Management in Germany, what speaks against it?
6. What is your opinion about the following aspects with regards to an area-wide Case Management in Germany?
    a. Access to the use of patients data due to grouping and care taking
    b. Payment systems in the German health system
    c. Incentivising the different actors of the health system
    d. Role of Government

11.3 Interviewee's <xQuotes within Prominent Codes

11.3.1 Identification

Interviewees	Quotes Within The Prominent Quote Identification
SHI_S_01	A doctor sees, knows that there is a problem, a potentially care-intensive case where a lot has to be organized and has to think about, if he knows that there exists a central institution where somebody is responsible for that, that one can activate it. The GP-contract includes an ICD-software that informs the GP when a care-intensive case is given for which she can order a Case Manager from the insurance. It is possible that a care-intensive identified patient is already in good holistic care. And the general practitioner has the best overview where there is need and where there is no need anymore.
SHI_S_02	We make a ranking list with high cost cases, exclude diagnosis where a CM intervention does not help, e.g. cancer
SHI_S_03	When we select paricipants, the acquisition is completely with us and we can control; otherwise many participants will be selected for whom it is not useful.
SHI_S_04	We have to offer CM target-oriented. We position the lever right with the patient`s first hospitalization and then case-manage him. External providers, e.g. telemedicine providers, sometimes acquire more patients than necessary because they are paid per participant.
SHI_EX_06	
SHI_EX_11	I am not responsible for the identification of patients. I do not feel that it is a problem.
SHI_S_13	Case Management is very expensive thus you have to be extremely careful with who does the intake of patients
SHI_S_16	
SHI_S_17	1300 EUR difference per person is a lot and the incentive to enroll was high or everybody involved
SHI_S_20	We do prefer having the identification in-house.
PHI_S_12	
PHI_S_15	There was a tendency to take in more patients than actually necessary.
CP_S_07	
CP_S_19	The social service receives a note when a relevant case is there, e.g. a hip surgery, then she goes to the patient, consults the patient on where to go after hospital discharge There are not enough general practitioners I doubt that a practice can coordinate CM. It is already difficult when the GP has to diagnose and send patients to specialists because he theoretically requires both broad and specialized knowledge. The better educated the person who is doing the screening and selection is, the more expensive it gets.
CP_S_21	
P_S_09	
P_S_10	The physician has to decide which patient requires what care intensity; in cooperation with specialists.
A_S_05	
RI_EV_14	Ideally the Identification of eligible Patients bases on studies, where exactly that is investigated. For instance there are scores that estimate risk of hospitalization

11.3.2 Data

Interviewees	Quotes Within The Prominent Code Data
SHI_S_01	Obstacles due to data protection exist, but for us rather in theory.. Due to the conceptualization of Case Management the input regarding the need for a Case Manager comes predominantly from doctors and also from the insured relatives, and consequently the necessity to use data in any way did not come up.
SHI_S_02	We do not have an electronic patient record and a platform where we can exchange patient data.
SHI_S_03	We do not have all data from ambulatory care . We receive their diagnosis with a 8 months delay. Thus we have no data available. Data protection is a problem when the patient has to sign an agreement.
SHI_S_04	Well, the data is available but ne cannot use them. Makes no sense at all: the data is there but the governmental body says: you are not allowed to use them. Why? I do not understand it. If one tries to roll out Case Management, things such as data protection laws are limiting the possibilities.
SHI_EX_06	The diagnosis data of ambulatory care is bad and unreliable.
SHI_EX_11	We have the advantage that we have most data about our insurants. And i can use th data if the patient agrees.
SHI_S_13	We lack the central possibility to steer; we do not reach the patient. We do not know in advance that a hospital treatment is taking place. We try to overcome this problem by cooperating with the hospitals or physicians.
SHI_S_16	Data is obviously coded. I know that patient X accounts for a certain number of care contacts but i do not know that it is Mr. Mueller. The next issue is that our data is often not reliable. The physicians dianosis is very often not transparent.
SHI_S_17	No, it would make no sense if any other institutions tries to offer Case Management. Everybody else does not have the possibility to identify or contact a certain target group.
SHI_S_20	Data protection is an important issue for us. It harms the availability and use.
PHI_S_12	
PHI_S_15	We are limited to the perspective we have from the communication with care providers. Having data is important because the patient immediately recongnizes if we do not unerstand him. It is not certain that a patient is moved to another care setting in the right moment. And we cn only control and corodinate the transition if we have the ifnormation.
CP_S_07	If the patient doesn't consent to the data exchange, then you are dependent on for example a physician's letter, with the discharge from the hospital there is always a physician's letter, and the explicit information about the partient in it.
CP_S_19	The exchange among physicians is very difficult in terms of privacy. We are not allowed to make available too much data to downstream service providers, except the patient approves this with the help of 85 froms. Therefore, a data exchange is almost not or even not feasible with resident physicians and similar outpatient service providers.
CP_S_21	We have all the data we need. Of course the health insurnaces wished they had the same.
P_S_09	Our programs are positioned that we know that we are starting from scratch, sometimes it also good, because then certain burdening issues don't matter.
P_S_10	
A_S_05	Yes, the generic rule is that everything works with a clear consent. But mostly you are too lazy to get that consent. Often it is also a good reason not to do something you don't want to do. But everything is possible, despite data privacy.
RI_EV_14	There is an increasing fragmentation of care. Especially in the case of multi-morbidity it is difficult when nobody has the overview and reverse-medication or double-medication occurs.

11.3.3 Participation

Interviewees	Quotes Within The Prominent Code Participation
SHI_S_01	
SHI_S_02	Enrolment of 10-25% max if it is an external provider.
SHI_S_03	Participation rate is a problem with all Case Management programs that we initiate, with all programs that are initiated by statuary health insurances. We have 25-50% [enrolment rate in] diabetes programs, because we have the physicians working with us.
SHI_S_04	
SHI_EX_06	No direct answer to the question. Die im Program (Pflegeberatung) sind, sind sehr zufrieden.
SHI_EX_11	
SHI_S_13	Yes. Many people are looking forward to that. Well, the ones that don't want to be called or coached form only a small part, I even think below 5%. The end is simply due to the controlled sickness.
SHI_S_16	Well, the participation rates are no really high.
SHI_S_17	The initial contact to the insurant has to be made practically by the insurance company. The rate of participation is thus a bit different, because it is dichotomous. This of course isn't 100%, that's obvious. Well, they want to be part of external intervention programs, then you get various rates - 20%, 30%, 40% depending on the situation. For example, mentally ill people welcome such a support and are often very thankful and positive towards it.
SHI_S_20	
PHI_S_12	Many do not participate because their usual doctor is not part of the program. It is extremely difficult to get the patients in the very moment where it would be most important to enroll them in a Case Management program, because they do not care when they have no immediate pain.
PHI_S_15	You can only convince clients with information, as easy as that. You can inform, you can make suggestions and the client either accepts or he doesn't
CP_07	Perhaps the scale is low because the population is not informed about it. This would be the responsibility of the health insurances.
CP_S_19	Why should a patient participate in a program offered by its health insurance? The patient knows that they nly want to save money.
CP_S_21	Yes, the acceptance is good. The people trust in our hospital. We have a very good reputation.
P_S_09	It depends. If we [Case Management service firm] call the potential participant a second time, I would say 10%.
P_S_10	
A_S_05	Making the patient agree, especially with 3rd party involvement is difficult.
RI_EV_14	

11.3.4 Trust

Interviewees	Quotes Within the Prominent Code Trust
SHI_S_01	Getting close to the patient is important in order to enable Case Management operations. That requires building a trusting relationship on the phone.
SHI_S_02	The patient also has to agree but the advantage is that the patient already has a person of trust and can go to her personal pharmacists.
SHI_S_03	The physician has a special trusting relationship with the patients.
SHI_S_04	And here is the problem that one only gets the agreement if the patient already feels his need. The other insurants are not interested.
SHI_EX_06	Trust of our clients we gain through transparency about what our intention is, about what we can offer and the client can decide if he wants to participate and to communicate with us.
SHI_EX_11	If we as health insurance come and offer something and it is a patient who has made bad experiences then they often feel controlled or so and are less honest with us.
SHI_S_13	We rely (…) but on hard quality factors that one can explain to the patient.
SHI_S_16	
SHI_S_17	If the physician advises someone [the patient] not to do something then that is a big barrier.
SHI_S_20	Trust is always a prerequisite.
PHI_S_12	After a while when you have built trust it is as if you know each other personally and you start sharing a lot with each other.
PHI_S_15	We gain the trust of our clients through transparency about what our intention is and about what we can offer - and the client can decide. The client needs to have trust in the intervention.
CP_S_07	In our opinion they [the Case Managers] should directly be involved in the care of the patients because the intimacy is important in order to get to know everything about the patient.
CP_S_19	
CP_21	Our patients naturally trust us. They feel in good care.
P_S_09	We found it [the communication between the Case Manager and the patient] to be effective in most cases when we call the insurant [patient] several times. Then there is a basis of trust and patients are even happy if we call and talk honestly with us.
P_S_10	
A_S_05	
RI_EV_14	When the Case Management is with the physicians, trust is not the issue.

11.3.5 Cooperation

Interviewees	Quotes Within The Prominent Code Cooperation
SHI_S_01	It [the cooperation] depends; it is a very heterogeneous field. It is helpful if one is able to overcome the speechlessness or the not-knowing-about-each-other.
SHI_S_02	
SHI_S_03	
SHI_S_04	
SHI_EX_06	Cooperation with care physicians and hospitals is in general good. Sometimes it is difficult with physicians because they find it stupid.
SHI_EX_11	It [the cooperation] differs. Sometimes they eyeball us. They still believe it is about control. With in-patient care my advantage is that it is also my background, I know my stakeholders, and there I have absolutely no problems.
SHI_S_13	
SHI_S_16	
SHI_S_17	Yes, to involve physicians is always another story. Well, of course it is important that physicians have the possibility to be informed about that. But the cooperation is varyingly good.
SHI_S_20	
PHI_S_12	Exactly, but one has to get to the bottom of the issue of what is good for everybody within these borders.
PHI_S_15	
CP_S_07	CM has developed into its own ways after a non-constructive cooperation with the chief physician. And then each chief physician has more or less developed and also implemented his own case management concept.
CP_S_19	Exactly, and we have many rehab clinics with which we also work a bit better because the communication and transition management is better there.
CP_S_21	Why shoul we cooperate with the insurances? We have contracts, that is enough.
P_S_09	Physicians feel their core competence is under attack
P_S_10	No resistance [to cooperation] at all. A hospital has a generic interest in sending the patient with a clear conscience to out-patient care and Case Management improves the transition hereby.
A_S_05	
RI_EV_14	

11.3.6 Incentives

Interviewees	Quotes Within the Prominent Code Incentives
SHI_S_01	We see the need for financial incentives for the cooperation between the physicians and us.
SHI_S_02	Something has to happen in order to incentivize that health insurances who invest in process optimization also benefit financially. Yet, how to design a reasonable reimbursement system that fosters cooperation?
SHI_S_03	It is not working in another way. That is why health care management has to have two sides, one has to invest money and hope that it will pay off, that there will be a benefit for the health insurance, for the insurant, for the insurance and the physician, that is the most perfect outcome, then the program is working, but often this is hard to realize. Everything is shaped by own interests.
SHI_S_04	It is unfortunately like that. You first have to pay the physician money in order to gain access to certain information.
SHI_EX_06	Well, I am sure it works not only with money, but always with conviction about was is done contentwise. Thridly, it is all about feasibility. Further, that it doesn't result in an administrative chaos, but that it is feasible and practically realizable.
SHI_EX_11	To a lesser extent, well, here this is well accepted. Well, I don't have any problems with other special service providers either.
SHI_S_13	One has to admit that it surely makes sense to offer financial incentives to get available data.
SHI_S_16	We are working in a field, which is hard and which is approved penologically, so then I do something to achieve a population which is relatively less sick and with that the more money I get.
SHI_S_17	It is always only working with the help of compensations of the additional efforts.
SHI_S_20	Incentives are complicated.
PHI_S_12	Well it is troublesome to initiate and roll-out Case Management. You need to acquire the know-how. Then there is the classic problem of the health care system in which interests compete with each other.
PHI_S_15	It always has to be a profitable issue for all parties involved, that is why it is placed wrongly on the service providers' side.
CP_S_07	
CP_S_19	Exactly, case management should be compensated differently.
CP_S_21	Cureently the incentive systems are not soo muc aligned
P_S_09	Physicians have a lot to do. Constantly somebody is calling them, (…) and then also the health insurance wants something.
P_S_10	He has a material incentive, if he employs a case manager. The operating individuals - the decision-makers need to get along with each other and of course there have to be products that cover the interests of the insurance companies, which on the other hand have to be feasible for the physicans also, and where finally a real win-win situation can be developed.
A_S_05	From my perspective there is in that respect no conflict, because somebody pays it and who pays, instructs. But there is quasi motivation for Case Management that is different with different parties in different sectors, and thus Case Management has produced strange effects.
RI_EV_14	Everybody optimizes; and in-patient care competes with out-patient care. There is no shared interest in jointly treating a patient within Case Management because of the competition. One problem of the whole implementation is indeed, that the simple, on large scale rolled out Case Management is not rewarded and financed among the SHIs.

11.3.7 Contracts

Interviewees	Quotes Within The Prominent Code Contracts
SHI_S_01	Could be that internal CM is an advantage, because employees, who have worked with the contracts better understand the different contractual regulation in different regions than an external person who has different cases with different requirements.
SHI_S_02	In my opinoin we avoided that from the beginning on because we made the physicians accountable.
SHI_S_03	The problem is to have contracts with individual physician. That does not work. They do not want this. It is too much of an effot for the physician because then he has to invest in a software and engage in a lot of additional work.
SHI_S_04	
SHI_EX_06	
SHI_EX_11	
SHI_S_13	The German system says something can be included in the catalog of statuary health insurances when it is effective for everybody. That harms Case Management. With contracts I can demand a good price and i force the contacted stakeholders to act along defined criteria. In the end I want to decide and control what should happen to my insurants.
SHI_S_16	Well, contracts. The ambulatory sector is difficult to contract. You mostly have collective contracts and there the compliance is even lower
SHI_S_17	A network with 70 physicians where everybody is contracted does not mean that everybody is compliant and equally compliant. there is indeed an incline in compliance, there is always one third leading, one-third kind of compliant, and one-third lagging behind.
SHI_S_20	There are selective contracts for Case Management. They account for ensure that the physicians.. i would say, that the physician systematically treats the patient. But that cannot be done nation-wide.
PHI_S_12	Contracts with providers allow us negtiate better prices.
PHI_S_15	
CP_S_07	
CP_S_19	The collaboration is how it is when somebody sends a bill and the other one has to pay it. I perceive selective contracts as effective yes. By having contracts tat ensure people act in compliance to something zou create quality instead of quantity. But never ever should one exactly define how a physician has to treat his patient. That does not work.
CP_S_21	Due to our contracts wit the insurances we have to account for everything we do.
P_S_09	
P_S_10	Under no circumstances should one have doctors in the Case Management Call Center, because they autonomously decide everything based on their medical freedom of treatment. If one wants to follow certain, structured paths, one should employ caregivers who are used to abide by guidelines
A_S_05	If one wants to have structured care paths and compliance to them, one should hire care employees. They are more used to working in compliance with rules.
RI_EV_14	