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Which core practices contribute to the sustained effectiveness of value-based healthcare?

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Abstract

This thesis explores the sustainable implementation of Value-Based Health Care (VBHC) by developing a self-guiding, adaptive framework tailored to global healthcare contexts. Existing linear approaches have resulted in fragmented adoption due to systemic barriers and lack of sustainable integration. The proposed 'hammer-throw model' addresses these challenges with a flexible, evolving strategy that emphasizes iterative processes, including contracting, financial incentives, communication and cultural change. Based on a literature review and 12 high-level expert interviews, this model offers hospitals as well as health care organisations a roadmap for transitioning from volume-based to value-based care, with a focus on sustainability and patient-centred outcomes.

Keywords

Value Based Health Care; Implementation; Change Management, Patient Centered Care

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1. Introduction

> *"A leader must be easy to follow. The leader embraces himself as an equal, so it´s not about the leader anymore – its about them, plural! And it takes guts to be a first follower."(Sivers, 2014)*

In healthcare transformation initiatives, the journey often begins with a single step, a leader and the first followers, similar to the "dancing man" metaphor described by Sally Lewis in our interview. Imagine a lone person who, despite initial scepticism, starts dancing at a gathering. At first, he stands alone, but as the audience sees his enthusiasm and conviction - one by one - they join in until the whole crowd is dancing in unison. This image captures the essence of Value-Based Health Care (VBHC): an approach that, once its potential is fully understood, inspires widespread adoption and systemic change across healthcare institutions globally. Pioneered by Michael Porter and Elizabeth Teisberg in 2006, VBHC seeks to shift the focus of healthcare systems from the volume of services provided to the value generated for patients, thereby improving outcomes while controlling costs.

As healthcare systems around the world struggle with rising costs, inconsistent quality and varying access to care, a paradigm shift is urgently needed. Despite numerous attempts to integrate VBHC principles into practice, it´s realization has often been piecemeal and unsustainable due to a lack of a coherent strategy that considers the different challenges faced by hospitals in different regions. The fragmented nature of healthcare, coupled with resistance to change and misaligned financial incentives, has led to a slow uptake of VBHC.

However, the goal is not only for hospitals around the world to begin "dancing" to VBHC principles, but also to ensure that this dance is sustainable - continuous, adaptable and resilient. While prior research has introduced various approaches to VBHC implementation, these are predominantly linear models that fail to account for the dynamic, culturally diverse, and rapidly changing landscape of healthcare systems. To address these limitations, this thesis aims to

answer the research question "what core practices contribute to the sustainable effectiveness of value-based healthcare?". Through a comprehensive literature review and 12 in-depth interviews with stakeholders, including hospital administrators, physicians, legal experts and renowned academics, we will outline a revolutionary approach to the sustainable implementation of VBHC. The aim is to develop a self-guiding, adaptive framework that is tailored to the complex realities of healthcare organisations worldwide and ensures that, once started, hospitals continue to 'dance' to the rhythm of value and patient-centred outcomes.

The proposed "Hammer-Throw Model" is designed to evolve with the unique needs and contexts of different healthcare settings. Drawing inspiration from the hammer throw discipline, where precision, technique, and continuous adjustments are crucial, this model offers a flexible approach that integrates theoretical foundations with practical insights from high-profile experts like Elizabeth Teisberg and Scott Wallace. With this, we aim to provide a roadmap for hospitals to transition sustainably from volume-based to value-driven care in standardized chronical diseases. Ultimately, the aspiration is that, like the dancers who follow the first bold steps of the dancing man, hospitals around the world will be inspired to embrace VBHC, not just as a fleeting trend but as a lasting transformation that redefines the future of healthcare.

2. Literature Review: Theoretical Foundations of VBHC

2.1. It is Time for a fundamentally new Strategy – Overview of VBHC

“In health care, the days of business as usual are over” (Porter & Lee, 2013). Every health care system around the world is grappling with increasing costs and inconsistent quality, despite the diligent efforts of well-intentioned and well-trained clinicians. The realization that the processes in the US health care system suffer from a variety of disruptions was the basis for the development of the VBHC concept by the US economist and management researcher Michael Porter from Harvard University and the engineer and health ecologist Elizabeth Teisberg from the University of Texas. The foundations of their approach can be found in the book "Redefining

Health Care: Creating Value-Based Competition on Results", published in 2006. Porter & Teisberg (2006) identify a lack of congruence between the goals pursued by the individual players in the health care system as a fundamental problem of the health care system such as rising health care costs and inconsistent quality.

As Porter & Teisberg (2006) point out, the health care system faces significant challenges, including preventable errors, wide variations in cost and quality across providers and geographic regions, slow adoption of best practices, and resistance to innovation. In addition, access to needed services is often limited, resulting in substandard care. Conversely, some services are characterized by overprovision and overuse, adherence to established standards of care is inconsistent, and preventable errors of care are common. Further, they point out the wide variations in the quality and cost of health care between different providers and geographical locations. The spread of best practices is slow, and there is a reluctance to adopt innovative health care solutions. These problems highlight the urgent need for systemic reform of health care delivery and a fundamentally new strategy.

To address those problems, VBHC aims to further improve quality and performance of care as well as the equitable, sustainable, and transparent use of resources (Hurst et al. 2019). Currently, there is no universally agreed-upon definition of Value-Based Health Care. However, Van Engen et al., (2022) highlight that most VBHC programs share a multifaceted approach that prioritizes patient-reported quality and performance indicators in addition to clinical outcomes. Examples of these indicators include Patient Reported Outcome Measures (PROMs) and Patient Reported Experience Measures (PREMs). The primary objectives of Value-Based Health Care centers on five key areas: (1) enhancing patient health outcomes, (2) improving patient experiences, (3) elevating the well-being and the experience of health care professionals, (4) lowering health care costs, and (5) ensuring the efficiency of health care delivery. Compared to conventional care approaches, VBHC can transform the work of health care professionals by emphasizing activities that promote value and encourage team-based care. Bohmer (2011)

highlights that this includes engaging in discussions about value with patients, making decisions collaboratively, and ultimately aligning on a common goal. Crucially, the definition of this goal must consider the perspective of those affected, namely their expectations of the outcome of a therapy. Porter & Teisberg (2006) highlight the shift from what physicians do to what the patient needs. It is about focusing on continuous learning and improvement through quality and performance metrics and organizing care along specific pathways. While some of these practices may not be entirely novel, the distinction lies in utilizing each activity as a tool for creating value (Porter & Lee, 2013). A crucial component of the strategy for delivering value-based health care is collecting outcome data, analyzing it, and reporting on it. The International Consortium for Health Outcomes Measurement (ICHOM) recruited an international working group of clinical heart failure experts, researchers, and patient representatives to define a standard set of outcomes and risk-adjustment variables, introducing the ICHOM questionnaire (Burns et al., 2020). Standardization is important as it enables scalability. Outcomes, which are the numerator of the value equation, are inherently multifaceted and condition-specific (Porter, 2010). Therefore, the standard-set helps to provide a solid basement for outcome measurement, which can and should be complemented by context- and geographically-specific questions. Measuring outcomes requires a dedicated team and significant effort, which can be challenging to integrate into the busy schedules of health care facilities due to their rigid IT infrastructures (Dacheva et al., 2022). The extent to which countries have already implemented VBHC can be determined by comparing their progress in the following areas: (1) Organize care into IPUs (2) Measure outcomes and costs for every patient, (3) Move to VBHC payments for care cycles such as bundled payments, Pay-for-Performance and Value-Based Pricing, (4) Integrate Care Delivery across separate facilities, (5) Expand excellent services across geography and (6) Building an enabling information technology platform.

2.2. The Value-Based Health Care Formula

With their concept, Porter & Teisberg (2006) propose a change in the approach to daily medical practice. They suggest comprehensive structural reforms that incentivize actions focused on patient well-being. They argue against surgical departments being compensated based on the number of operations performed. Instead, the success of the therapy should be the decisive factor, based on how many patients achieved the predefined objective of their operations. This approach can be explained in a mathematical formula, where the value of a medical intervention is determined by its outcome relative to its necessary costs. By including the economic dimension, they aim to improve the efficiency of the health care system.

$$V = \frac{\text{Patient Outcomes} \times \text{Pertinence}}{\text{Cost}}$$

It is important to note that within the framework of VBHC, scholars and practitioners do not calculate the mentioned ratio (Lindgren & Althin, 2021). Rather, it can be used as an illustration to show that value can be increased in different ways. By either decreasing costs while maintaining the same outcomes or by improving outcomes while keeping costs constant, both of these scenarios would lead to an increase in value. Additionally, the model's outcome is not limited to a single point in time, but rather should be viewed in the long term. Therefore, maximizing the outcome requires a focus on the long-term health development of patients, rather than just the success of individual interventions. This statement highlights the importance of considering outcomes as multidimensional values that are co-defined by patients, rather than solely by health care professionals (Porter, 2010).

Similarly, the costs represented in the formula below the line should be viewed in the long-term context, encompassing not just the expense of a single procedure, such as a short hospital stay, but the total costs across the entire treatment cycle (Scott et al., 2018). This underlines Porter and Teisberg's thesis that the 'Patient Journey' should be viewed as a cohesive process, not in fragmented parts. So, enhancing the value of treatment can be achieved in two ways: by

improving outcomes or/and by reducing costs. However, Porter (2006) cautions against interpreting the value definition merely as a prompt to broadly push for reduced spending. Instead, it's emphasized that the efficiency of medical interventions plays a crucial role, expressed mathematically by relating quality to costs. This implies that resources should ideally be allocated where they have the greatest impact, leading to the call for correcting misincentives in the health care system (Scott et al., 2018). Porter & Teisberg (2006) argue that value in health care is determined by what matters most to the patient. However, different patients may have varying preferences, and providers or payers may interpret patients' values differently. Despite this lack of consensus, having a clearly defined outcome measure is critical for carrying out VBHC and building incentives around the relevant outcomes. Overall, there are three underlying axioms in VBHC: (1) the goal is to improve value, (2) the unit of measurement is the medical condition (along with Integrated Practice Units (IPUs)), and (3) the measurement is across the entire patient care cycle.

2.3. Systematic Review of Implementation Frameworks in VBHC

Between 2013 and 2023, extensive research has identified several critical components that are essential for the successful implementation of VBHC and various implementation frameworks. The following elements are central to the effective embedding of VBHC principles within healthcare systems, as they directly address common barriers and enhance the adaptability of the system to a value-based approach:

(1) **Organization of care into integrated care units:** Structuring healthcare delivery into integrated care units (ICUs) is foundational for VBHC frameworks, as it enables multidisciplinary teams to manage entire patient care cycles under a unified structure (Porter & Teisberg, 2006). This approach minimizes fragmentation by fostering communication across departments and ensuring continuity of care throughout the patient journey (Fernández-Salido et al., 2024). During implementation, transitioning to ICUs requires

reconfiguring resources and workflows, but this integration streamlines care delivery, improves data consistency, and reduces redundant treatments. Additionally, ICUs allow healthcare providers to align treatments and objectives according to specific patient needs and medical conditions, ultimately resulting in higher-quality, patient-centered outcomes (Nilsson, Bååthe, Erichsen Andersson, et al., 2017).

(2) Identification and standardization of outcome measures: In their roadmap for implementing VBHC in European University Hospitals, (Cossio-Gil et al. 2022) emphasize on the standardized outcome measures as they allow healthcare providers to evaluate and quantify the value generated through care processes. The implementation of these measures requires healthcare systems to adopt a robust data infrastructure and engage in continuous training to ensure data accuracy and consistency (Fernández-Salido et al., 2024). Standardized outcomes also enable benchmarking and inter-hospital comparisons, promoting transparency and accountability across institutions. However, integrating outcome measures into the daily practices of healthcare teams poses challenges, particularly in aligning new evaluation methods with existing workflows. Successful frameworks must therefore include tools for data management, clear guidelines on outcome reporting, and a phased approach to implementing these measures, ensuring they become intrinsic to the VBHC model rather than additional administrative burdens (Porter, 2005).

(3) **Inclusion of patient perspective:** The emphasis on patient-centeredness is integral to VBHC implementation, with patient perspectives providing a lens through which value is defined and measured (Porter et al., 2016). Frameworks for implementing VBHC prioritize mechanisms to systematically collect and incorporate patient-reported outcomes and experiences into the care process (Fernández-Salido et al., 2024). In practice, this means embedding shared decision-making processes and training providers to engage patients actively in setting health goals, which may require shifts in both culture

and policy within healthcare organizations. Patient inclusion challenges traditional, provider-centered care models and demands a focus on empathy, communication, and transparency (Steinmann et al., 2022).

Despite the promising implementation plans of VBHC, significant challenges continue to limit its broad adoption across healthcare systems. Therefore, research has also highlighted four major reasons for this limited, unsustainable success:

(1) **Insufficient knowledge:** The lack of knowledge regarding the VBHC concept stems from its relative novelty and multifaceted approach to health care delivery. Health care professionals and patients are yet not fully aware of VBHC's principles or how they can be applied in practice, leading to resistance or indifference toward adopting VBHC methodologies (Van Staalduinen et al., 2022).

(2) **Limited Leadership:** Effective leadership as the next step is crucial for the implementation of VBHC (Widyaputri, 2022). It drives change, sets a vision and engages staff in new initiatives. Without strong leadership, VBHC transformation efforts can become fragmented and directionless. As a result, initiatives can stall or fail to get off the ground because there is no driving force to overcome institutional inertia and the challenges of adopting new practices.

(3) **Low staff motivation:** This is closely linked to the success of any new initiative. In the context of VBHC, the lack of motivation among health care workers can be attributed to several factors, including a perceived increase in workload without clear benefits, a lack of recognition for their efforts, and insufficient alignment with their professional goals and values (Dacheva et al., 2022). Without motivation, staff may not invest the necessary effort to learn about, support, or implement VBHC practices effectively.

(4) **Inadequate Incentives:** A crucial issue that hinders the wider adoption of VBHC. Traditional healthcare systems often reward volume over value, providing little financial or professional incentive for practitioners to focus on outcomes rather than the number of

procedures performed (Gerber, 2022). Without appropriate incentives that align financial and professional rewards with VBHC goals, there might be little motivation for individuals and institutions to change established practices (Widyaputri, 2022).

The execution of these implementation plans often follows a similar approach, resulting in a linear "value agenda" that offers initial guidance on incorporating VBHC within healthcare organizations. However, this agenda frequently lacks comprehensive detail on the practical application of VBHC strategies. Consequently, Daniels et al., (2022) highlight the need for a more in-depth examination of specific methodologies and approaches customized to individual healthcare settings to facilitate a successful shift towards a value-driven model. Thus, a fully adaptable and responsive implementation framework, which is somewhat *dynamic*, has not yet been fully introduced and remains underdeveloped.

2.4. Key Drivers in Sustainable VBHC Implementation

A long-term successful project implementation generally involves carefully balancing diverse objectives, which often requires simultaneous attention to various human, budgetary, and technical variables (Pinto & Slevin, 1997). Similarly, sustainable implementation of VBHC demands a long-term perspective to balance innovative change with stable structures that allow healthcare systems to prioritize patient outcomes while maintaining operational efficiency (Kaplan & Porter, 2011; Porter & Lee, 2013). This balance resonates with the concept of exploring new possibilities while exploiting existing strengths, as March (1991) notes: “The basic problem confronting an organization is to engage in sufficient exploitation to ensure its current viability and, at the same time, devote enough energy to exploration to ensure its future viability.” Overemphasizing exploration can lead to excessive experimentation with limited benefits, while an exclusive focus on exploitation may result in diminishing returns (March, 1991:71). Effective VBHC adoption requires embedding these principles within organizational processes and culture, fostering both resilience and adaptability. Studies underscore that VBHC strategies

must extend beyond initial adoption to encompass systemic changes that support continuous improvement and value-driven care (Kaplan & Porter, 2011; Porter & Lee, 2013).

An extensive study, which explored key success factors for a sustainable VBHC implementation highlights first of all, the importance of targeting both cost-reduction and patient-centered outcomes simultaneously, as these objectives reinforce each other in creating sustainable value in healthcare delivery, underlined by a robust IT infrastructure, essential for tracking outcomes and costs effectively. They also suggest that without adequate IT support, VBHC initiatives face significant barriers, whereas well-integrated systems allow for continuous evaluation and adaptation, which are essential to the success of VBHC initiatives (Renting et al., 2022).

Additionally, aligning financial incentives with health outcomes is crucial, as financial models directly influence provider behavior. Teisberg et al. (2020) argue that incentive structures like bundled payments and value-based contracting foster accountability and efficiency by rewarding improved patient outcomes rather than volume-based services (Teisberg et al., 2020). The shift to VBHC requires strategic communication and cultural transformation within institutions. Effective communication aligns stakeholders and supports relationship-centered care, bridging technical needs with patient-centered interactions (Rider et al., 2014). Multidisciplinary teams that integrate diverse perspectives foster innovation for VBHC implementation (Hinds et al., 2011). Additionally, creating a culture that prioritizes patient outcomes over volume-driven care is crucial. Leadership plays a pivotal role in embedding VBHC principles, ensuring that quality, outcomes, and cost-effectiveness become core organizational values (Fernández-Salido et al., 2024; Santos et al., 2022).

These elements collectively underscore the need for a comprehensive approach to ensure the long-term success of VBHC implementation, which will be depicted in more depth in the following subchapters.

2.4.1. Cost and Outcome Measurement

The primary issue in healthcare is the inability to accurately ascertain the actual costs associated with providing care. The majority of contemporary cost measurements are based on aggregate data and reimbursement-driven systems, which are inadequate for accurately reflecting the true costs of resources utilized in patient care. The accurate measurement of costs, particularly through the implementation of time-driven activity-based costing (TDABC), is a crucial element in the long-term viability of VBHC. The application of TDABC enables healthcare providers to monitor costs throughout the entirety of the care cycle, from the initial diagnosis to the ultimate recovery of the patient. This allows for the optimal allocation of resources towards activities that enhance patient outcomes. As Kaplan and Porter (2011) observed, the inability to measure costs effectively hinders the implementation of cost reductions in VBHC (Kaplan & Porter, 2011).

A focus on the total costs across a patient's care cycle, rather than on isolated departments, allows healthcare providers to understand the value of their services by assessing the outcomes relative to the costs incurred. Porter (2011) further asserts that this approach enables structural cost reduction by reallocating spending, eliminating non-value-adding services, and optimizing resource use. By associating cost data with each stage of the care process, healthcare organizations can make well-informed decisions that enhance patient outcomes and reduce unnecessary expenses (Porter, 2010). In addition, TDABC facilitates the transition to bundled payments by providing accurate cost data that enables the implementation of equitable payment structures across the care cycle, aligning financial incentives with patient outcomes. This payment model uncovers inefficiencies in resource utilization, enabling organizations to optimize processes, eliminate redundancies and prevent cost inflation. These operational improvements, supported by robust IT systems, ensure that VBHCs remain financially sustainable and focused on

outcomes-based care. Thus, TDABC facilitates data-driven decision-making, providing healthcare leaders with insights for continuous adaptation and process refinement (Kaplan & Porter, 2011).

Outcome measurement, specifically through Patient-Reported Outcome Measures (PROMs) and Patient-Reported Experience Measures (PREMs), is equally as crucial for sustainability within the VBHC framework, as these measures directly patient-centered outcomes that align with long-term health improvements and resource efficiency. PROMs and PREMs ensure that healthcare delivery is responsive to patients' health status and experiences, providing insights into the actual benefits of treatments beyond clinical indicators alone (Nilsson, Bååthe, Andersson, et al., 2017). By focusing on outcomes that patients value, healthcare providers can prioritize interventions that improve quality of life and functional health, which are essential for minimizing costly, repeated treatments or hospital readmissions (Daniels et al., 2022). This approach not only enhances patient satisfaction but also conserves resources over time, as healthcare systems are guided toward value-creating services rather than volume-based care (Steinmann et al., 2022). Therefore, PROMs and PREMs are indispensable in promoting a sustainable VBHC model, as they bridge patient-centered care with cost-effective, resilient healthcare delivery.

2.4.2. Role of Financial Incentives in Promoting VBHC

Drivers for a sustainable and constant shift to VBHC models are, among others, but most importantly, the practitioners and hospital leaders themselves. Employing agency theory in VBHC helps mitigate information asymmetry between patients (principals) and health care providers (agents), structuring incentives that compel providers to act in the best interests of patients, and emphasizing health outcomes over service volume (Conrad, 2015). Therefore, medical leaders must be convinced and intrinsically motivated to change their payment system. This shift is

essential to move away from traditional volume-based models, which often link physician salaries to the number of procedures performed, potentially leading to unnecessary expansion of services, increased health care costs, and increased patient risk. Financial incentives based on the quality of patient outcomes, such as bonus payments for high quality outcomes, are a viable solution to mitigate the problems of unnecessary procedures and excessive costs (Hänel et al., 2013). Hence, to meet the needs of management and society to improve the quality and effectiveness of medical care, learning- and performance targets are the essence of VBHC.
The transition to value-based health care represents a clear shift away from fee-for-service "volume-based" health care towards payment and rewards based on quality improvement and cost savings (Scott et al., 2018). Scott et al., (2018) discuss the shift from a volume-based to a value-based approach epitomized by the introduction of Value-Based Purchasing (VBP), a policy framework that defines and compensates health care services based on the quality, outcomes, and cost of care. VBP encapsulates a variety of models, including Pay for Performance (P4P) schemes and shared savings models, prevalent in Accountable Care Organizations (ACOs) in the United States. This approach discourages unnecessary procedures that do not contribute to patient health and may lead to increased risks and expenses (Hänel et al., 2013). Interestingly, Scott et al., (2018) discovered that there were no significant variations in outcomes between studies conducted in the United States and those performed in other countries, which indicates the effectiveness of such an approach isolated from culture and operational environment.

Building upon the understanding of financial incentives as pivotal mechanisms within VBHC, we identified seven different incentive models (explained in detail in Appendix 1): Pay-for-Performance (P4P), Capitation Payments, Bundled Payments, Shared Saving Programs, Global Budgets, Value-Based Pricing, and Fee-for-Service with Quality Adjustments. Each of these incentive models plays a significant role in the operational dynamics of health care systems

transitioning to VBHC, affecting both the strategic behavior of health care providers and the overall management of health care quality and costs.

Based on a comprehensive analysis (Appendix 2), three payment models—Pay for Performance, Bundled Payments, and Value-Based Pricing—emerge as particularly effective in promoting VBHC. These systems are favored because they establish a direct link between financial incentives and the quality and outcomes of care, encouraging providers to focus on what truly benefits patients. For instance, Pay for Performance and Value-Based Pricing incentivize high-quality care and improve patient outcomes by making payments conditional on meeting specific performance benchmarks. Similarly, Bundled Payments foster collaboration among health care providers to enhance care quality within fixed cost parameters for defined treatment episodes. The discussion underscores the potential benefits of employing a mixed payment model. The blending of elements from different systems can address the inherent limitations of any single approach. For instance, combining Capitation (which encourages preventive care) with performance-based incentives from Pay for Performance can drive both cost efficiency and high-quality care. Such hybrid models can provide a balanced incentive structure that fosters both efficiency and quality improvement (Scott et al., 2018).

Moreover, the effectiveness of financial incentives is not straightforward. As noted by Scott, Liu, and Yong (2018), the impact of incentive schemes on quality and cost metrics is mixed and largely dependent on the design of the incentive model. Clarity in performance metrics and appropriate sizing of financial incentives relative to provider revenue are critical factors. Incentives that support direct quality improvement activities are more likely to yield significant positive outcomes (Scott et al., 2018).

While Pay for Performance, Bundled Payments, and Value-Based Pricing have been identified as particularly effective in aligning with VBHC goals, no single payment model is universally applicable. A combination of different systems, tailored to specific health care settings and

goals, can provide the best results. This approach supports the notion that a "one size fits all" strategy is less effective in the complex landscape of health care.

2.4.3. (Value-Based) Contracting

Value-based contracting (VBC) in healthcare is a strategic approach that shifts financial risk and accountability from healthcare payers, like insurers, to healthcare providers. Providers are incentivized to improve the quality of care and reduce costs. Each type of value-based contract involves different levels of financial responsibility and care coverage for providers, who must balance both clinical outcomes and economic goals. Effective value-based contracting relies on rigorous data analysis, risk assessment, and continuous performance monitoring to ensure that providers meet targeted cost savings and quality metrics (Duncan, 2022).

One component within VBC is Bundled Payments, which consolidate payments for a defined episode of care, encouraging providers to coordinate care efficiently and limit unnecessary services. Bundled Payments are an essential part of VBC because they incentivize providers to manage the full continuum of care for specific conditions or treatment cycles. However, VBC goes beyond Bundled Payments to include additional components. The three main components of VBC include **outcome-based pricing**, where payments are tied directly to the achievement of predetermined health outcomes; **risk-sharing**, which allows providers and payers to share the financial risk associated with patient outcomes, e.g., costs are adjusted based on success or failure in achieving health goals; and **evidence-based metrics** that guide treatment decisions and measure value by comparing expected patient improvements with actual outcomes. These components aim to create a more sustainable health care system by aligning incentives with patient health rather than volume of services (Cohen, 2020; McCombs et al., 2019).

2.4.4. Communication

Transforming a vision or an idea of innovation into an actual effective outcome requires besides technological requirements and a formal contract also a high performing team within any organization or hospital. Especially in healthcare, human aspects are indispensable, encompassing core values such as compassion, ethics, and patient contact. This emphasis on relationship-centered care makes effective communication paramount in every healthcare interaction and in the implementation of value based health care (Rider et al., 2014). Smircich & Stubbart (1985) characterize an organizational team as "a set of people who share many beliefs, values, and assumptions that encourage them to make mutually-reinforcing interpretations of their own acts and the acts of others." Recent literature discussed this definition and argued it on the contrary. According to scholars, the highest performing teams are those that encourage different perspectives and ways of thinking (Cronin et al., 2011). Debating in detail and therefore taking a wider array of alternatives into consideration enables the emergence of new approaches. Therefore, many companies cooperate with other organizations bringing together people of diverse institutional environments.

The Formation of Multidisciplinary Teams in Hospitals that share and combine their unique expertise and stimulate innovation by exchanging knowledge is crucial in the early stages of VBHC implementation (Hinds et al., 2011). Whether on the macro level of the cooperating organizations or on the microlevel of new teams, possible complications might originate from differences between cooperating parties and from the ambiguity and uncertainty that usually prevail in the early stages of an expert team creation (Vlaar et al., 2006).

Sandoff & Nilsson (2016) emphasize in this context on the importance of communication and collaboration when working as a team "against the grain" in a hierarchical organizational structure. People involved in the process and managers at different levels need to be aware of these difficulties. Bååthe & Erik Norbäck (2013) suggest recognition, continuity, task and role clarity are central organizing principles to facilitate engagement in improvement processes.

Overcoming the gap between managers and clinical leaders on different levels calls for communication and cooperation.

Working in a diverse expert team means to share and combine expertise across organizational as well as cultural boundaries (Hajro et al., 2017). This facilitates to establish and mobilize new abilities and can result in the development and creation of new innovative ideas. In the end, it is an advantage for all partners involved as it supports the sharing of resources and risks, which are associated with innovation projects (Hagedoorn & Duysters, 2002). Knowledge exchange, therefore, within the initiation phase is a key element for an effective outcome. In order for all team participants to be "on the same page", they have to construct an approximately equal mindset, create norms and rules that define legitimate behavior through accepted regulations. These so-called institutions are socially constructed intangible shared understandings of a social process (Kostova et al., 2008). Institutions develop in an ongoing process starting with the emergence, the rise, the establishment, and then the consolidation within the IOR process. (Faems et al., 2005) illustrate the process as a repetitive sequence of a) negotiation, b) commitment, and c) execution stages. Not only within the initiation of an expert team on the macro level but also with an initial placement of every new innovation goal such as VBHC on the micro level, participants need to communicate joint expectations about their motivations, possible investments, and divide responsibilities rather than repress them. During the implementation process a mutual understanding between all persons involved can set the way to implement VBHC and carry it into effect. With the final state of full-institutionalization, all individuals share sufficient common understanding which is a major condition for innovation.

2.4.5. Institutional Cultural Change

Although the VBHC management strategy may serve as an initiator for improvements, it is not enough for the sustainable implementation of the concept. Regardless of strategy, managers and clinical leaders need to develop increased competence in change management (Nilsson, Bååthe,

Erichsen Andersson, et al., 2017). However, Nilsson et al., (2017) have no answers as yet to the questions of how successful some of their improvements were or whether they are sustainable and have a chance of surviving. We suggest three aspects that are crucial for a sustainable, long-lasting implementation with a high success factor.

(1) Leadership Commitment and Vision

Realigning and adopting new strategies and structures in response to evolving environmental conditions is critical for organizational leaders seeking long-term success in value-based healthcare (Santos et al., 2022). During periods of industry transformation and market transitions, leaders must demonstrate the willingness to dismantle existing business structures and realign strategies as needed. These shifts are often realized through discontinuous changes, which involve simultaneous adjustments in strategy, organizational structure, skill sets, and culture (Lillo et al., 2017). Such changes highlight the complex managerial demands that require leaders to periodically deconstruct what was previously established in order to rebuild a more agile and competitive organizational model, capable of addressing new demands.

Machiavelli’s centuries-old observation remains relevant today, as he remarked, "there is no more delicate matter to take in hand, nor more dangerous to conduct, nor more doubtful in its success, than to be a leader in the introduction of changes" (O’Reilly & Tushman, 2013). Leaders face an inherent tension between exploration and exploitation, and finding the optimal balance between these two can be difficult, as it largely depends on shifting environmental factors. Each hospital or healthcare institution presents its own unique characteristics, management culture, and internal dynamics among employees, further complicating this balance.

In the context of VBHC, strong, visionary leadership is indispensable. Leaders must be committed to embedding value-based principles into the institution's culture, fostering an organizational environment that prioritizes patient outcomes, cost-effectiveness, and quality over volume-driven models of care (Fernández-Salido et al., 2024). This shared vision, actively promoted by leadership, serves as the cornerstone of sustainable success. By guiding the institution

through these complex shifts, leaders not only navigate the challenges posed by market and industry changes but also ensure that their organizations are better positioned to meet future demands while maintaining the core values of compassionate, patient-centered care. Therefore, leaders must appoint change champions to serve as representatives of their vision, ensuring these individuals act as role models and actively promote the adoption of VBHC principles throughout the institution (Santos et al., 2022).

(2) Continuous Education and Motivation

Continuous education and training programs are critical for embedding the principles of value-based healthcare into daily clinical practice. These programs equip healthcare professionals with the necessary skills to fully understand and implement patient-centered care, cost-efficiency, and quality improvement measures (Porter & Lee, 2013). Training should prioritize interdisciplinary collaboration, fostering a culture where different healthcare professionals work together toward common patient-centered outcomes. Furthermore, programs must emphasize effective communication strategies with patients and colleagues, as well as the use of outcome-based metrics to guide clinical decisions (Santos et al., 2022). By focusing on these areas, education and training ensure that all staff members are aligned with the institution's vision and capable of delivering value-driven care.

(3) Sustainability and Continuous Improvement

In addition to leadership and training, a critical aspect of achieving long-term sustainability in value-based healthcare is the establishment of continuous improvement mechanisms. To maintain the momentum of cultural change, healthcare institutions must not only focus on innovation but also ensure that existing teams function cohesively and efficiently (Porter & Lee, 2013). Continuous improvement is closely tied to robust outcome measurement systems, which allow for the regular assessment of patient outcomes, cost-effectiveness, and the overall quality of care (Porter & Teisberg, 2006). By investing in modern technology and advanced data analytics,

healthcare organizations can streamline the process of gathering and interpreting outcome-based metrics, driving data-informed decision-making (Santos et al., 2022).

Achieving sustainability extends beyond merely integrating new technologies; it also demands a commitment to fostering effective collaboration among teams within the institution. A harmonious and well-functioning team environment is essential for maximizing the benefits of innovative practices and ensuring their successful implementation. Leaders must foster an environment where interdisciplinary collaboration thrives and all team members contribute effectively toward common goals (Nilsson, Bååthe, Erichsen Andersson, et al., 2017). By regularly reviewing performance metrics and refining processes to respond to evolving healthcare challenges, institutions can remain adaptive and resilient. This combination of investment in technology and the continuous refinement of team dynamics ensures that value-based care is not only sustained but consistently improved over time (Lillo et al., 2017).

3. Methodology

This thesis seeks to bridge the gap between theoretical constructs and practical implementation of Value-Based Health Care by addressing the critical drivers for sustainable adoption. Through this approach, it aims to answer the central research question: *" What core practices contribute to the sustainable effectiveness of value-based healthcare?"* To address this question, a comprehensive and multifaceted methodology is essential to develop a holistic implementation plan. To identify the key drivers for the sustainable implementation of VBHC, we conducted an extensive review of existing literature on the theory of VBHC. Given the heterogeneous and varied research approaches in VBHC studies, a scoping review proved suitable for addressing this study's broad questions. Foundational works, such as (Porter & Teisberg, 2006) the influential work *Redefining Health Care: Creating Value-Based Competition on Results* provides a crucial theoretical foundation for examining the role of financial incentives in value-based health care.To explore the complex dynamics of implementation across diverse stakeholders

—including scholars, VBHC experts, healthcare institutions, legal professionals, and medical practitioners—this research adopts a qualitative approach. Qualitative methods are particularly well-suited for exploring the nuanced perceptions and experiences of stakeholders involved in the implementation of VBHC. Faltermaier (1997) underscores the critical importance of qualitative methodologies especially in health research, highlighting their foundational role in addressing emerging research questions, vital for advancements in both the field of health research and practical health care applications. 26 high-profile experts were selected and contacted (Appendix 3a). Subsequently, 12 in-depth interviews were conducted (Appendix 3b) to assess the key factors of an sustainable implementation plan to improve long-term healthcare outcomes, reduce costs, and address barriers within varied healthcare systems. High -profile and renowned scholars, such as Elizabeth Teisberg—co-founder of the VBHC framework alongside Michael Porter—emphasize the significance and value of our interview-based approach.

The interview questions were semi-structured (open ended questions) as well as depth (one or two issues covered in great detail, discussion) (Britten, 2011), designed to elicit detailed responses on the following topics:

1. The alignment of key components in an implementation plan with the objectives of improving health care outcomes and reducing costs.
2. Specific changes and reforms needed within the health care systems to enhance the sustainability of VBHC implementation.

The discussion section subsequently examines various strategies for sustainable implementation. In addition to the interviews, we draw on data from a prior questionnaire-based study conducted in May 2024, in which healthcare administrators, policymakers, and clinicians provided insights into the advantages of various payment models (Appendix 4a-c).

This analysis culminates in a new comprehensive five-step implementation plan, the "Hammer Throw Model" (Figure 1), enhancing the sustained effectiveness of the implementation. We will then apply this concept to blood pressure as a chronic disease and provide forward-looking

recommendations to improve the effectiveness and long-term sustainability of VBHC through iterative processes (Figure 2) This analysis culminates in a new comprehensive five-step implementation plan, the "Hammer Throw Model" (Figure 1), enhancing the sustained effectiveness of the implementation. We will then apply this concept to blood pressure as a chronic disease and provide forward-looking recommendations to improve the effectiveness and long-term sustainability of VBHC through iterative processes (Figure 2).

4. Findings

4.1. Redefining Care

The insights conducted from the interviews emphasize the critical importance of redefining care as a fundamental, multi-dimensional component of sustainable VBHC implementation. The focus of this concept includes the shift from a volume-based to a value-based approach, therefore emphasizing the patients´ quality of life.

> *"The focus has changed from curing the disease to the patient's quality of life. VBHC covers the entire spectrum of healthcare, from prevention to the end of healthcare."* Hussein Rimmani (Roland Berger)

The majority of the interviewees view the transition to VBHC as essential, recognizing it as the future direction for healthcare systems worldwide. Many highlighted that VBHC offers a sustainable alternative to traditional healthcare models and encourages a holistic approach to care that addresses both immediate and long-term patient needs.

> *"VBHC is widely considered the future of healthcare because it challenges the traditional frameworks of how healthcare is delivered."*
> Virginie Luce-Garnier (Hôpitaux de Paris)

Nevertheless, one interviewee, Lucien Engelen, expressed skepticism about the value of VBHC for the healthcare sector. He argued that VBHC places excessive demands on healthcare professionals by prioritizing reporting efforts over the actual experience and impact for both professionals and patients. Additionally, he criticized the significant financial resources

allocated to VBHC initiatives over the years, suggesting that these funds could have been better used to improve healthcare delivery and support workforce retention.

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Patient Centeredness

Elizabeth Teisberg stressed that a meaningful shift to value-based healthcare must begin with a focus on understanding and addressing patient needs. She highlighted the importance of recognizing gaps in current care delivery—particularly those that may be overlooked in standard metrics or institutional processes. Engaging with patients and their families directly is crucial to uncovering these often-hidden barriers to optimal outcomes. Teisberg further argues that this patient-centered approach requires moving beyond traditional healthcare structures to truly embed patient engagement into the fabric of care.

> *"The first step is understanding the gaps that prevent people from achieving better outcomes (...) Essential to this is understanding the human perspective on where we're not achieving what we could, and you can't do that well without involvement of individuals, patients, families—people who need care."*
> Elizabeth Teisberg (Value Institute for Health and Care)

Scott Wallace complements this by advocating for an organizational model that reorients healthcare delivery around the needs of patients rather than the convenience of institutional frameworks. He emphasizes that, in many healthcare systems today, patients are often "bounced" from one service to another, a process he compares to a game of "patient Pong,"

where individuals are shuffled through a maze of referrals and departments. This fragmented approach not only diminishes the quality of care but also places a burden on patients to coordinate their treatments.

Medical Condition

As emphasized by many interviewees, a critical factor in implementing VBHC is the strategic selection of medical conditions to ensure the highest potential for success. Dr. Detlef Loppow stressed that specializing in a specific condition—prostate cancer in the case of the Martini Clinic—has been instrumental in delivering superior patient outcomes. By focusing exclusively on prostate carcinoma and handling a high volume of cases, the Martini Clinic was able to build the expertise necessary to achieve consistent, high-quality results.

> *"The Martini Clinic itself was founded in 2004. But for the first 12 years (...), we specialized in the treatment of prostate carcinoma in urology—a tender plant of specialization. You need 12 years of patience."*
> Dr. Detlef Loppow (Martini Clinic)

Dr. Loppow underscored that this long-term commitment to a single condition laid the groundwork for the clinic's success.

> *"Everyone thinks, that's where it really starts. And no one has in mind that these 12 years of specialization and patience and protection of this tender plant of specialization (...) also belong to it."*
> Dr. Detlef Loppow (Martini Clinic)

This dedicated focus on a high-volume condition allowed the Martini Clinic to refine its approach continuously, demonstrating that specialization and case volume are essential components for achieving the best possible outcomes in VBHC.

4.2. Cost Measurement

An essential aspect of VBHC implementation is the accurate measurement of costs, with many interviewees emphasizing that understanding costs is foundational for creating effective reimbursement models and ensuring financial sustainability. Time-Driven Activity-Based Costing

(TDABC) is frequently recommended as an optimal approach to cost measurement within VBHC, allowing for a precise assessment of resource allocation and expenditure. Ana Etges highlighted the importance of TDABC as a preliminary step. Moreover, TDABC not only provides clarity in cost structures but also enables healthcare systems to set realistic reimbursement levels and manage financial risks effectively.

“Measuring costs is a very important step. I recommend everyone (...) to stop and measure costs before doing anything.”
Ana Etges (PEV Health Care Consulting)

Similarly, Sally Lewis stressed that understanding costs is a critical component in driving VBHC initiatives forward, alongside outcome measurement and integrated care. This trifecta, as she explained, lays the groundwork for a comprehensive, long-term VBHC model.

Scott Wallace further underscored the importance of demonstrating cost savings to policymakers, advocating for the use of TDABC and other cost-measurement methods to illustrate the economic benefits of improved health outcomes. He noted that showing policymakers these savings can help garner support for VBHC initiatives, ultimately aiding in the model's broader adoption. Through the careful measurement of costs with TDABC, institutions can ensure a solid financial foundation, paving the way for more sustainable and impactful VBHC implementation.

4.3. Patient Outcomes

During the interviews, an understanding of the diverse approaches to measuring patient outcomes was developed, reflecting diverse perspectives on standardization, flexibility, and customization in outcome tracking. The majority advocated for standardized measures, with ICHOM sets frequently cited as a leading approach for global comparability. However, some experts recommended adaptations to better align with local contexts and individual patient needs, emphasizing a balance between standardization and personalization.

Standardized Outcome Sets (ICHOM)

Many interviewees underscored the value of using ICHOM sets for standardized, comparable outcome measurement. Hussein Rimmani and Bruna Zanatto expressed a strong endorsement for ICHOM, noting its status as a global benchmark. This view was shared by Sally Lewis, who explained that standardized data collection through ICHOM facilitates effective comparison and benchmarking between teams, ensuring a consistent framework for assessing patient outcomes and ultimately creating an interoperable data environment.

> *"If we don't use the same questionnaires, the same data, and the same time to collection, it won't be possible (...) Every time I say ′we will use ICHOM, ′ and ICHOM is an internationally validated methodology,"* Sally Lewis (Independent Healthcare Consultant)

Dr. Detlef Loppow provided a concrete example of how the Martini Clinic has effectively integrated ICHOM standards into its VBHC approach by actively engaging patients in outcome measurement. The clinic communicates with patients annually to share significant findings derived from their contributions, fostering a collaborative long-term relationship that reinforces patient loyalty and strengthens data quality.

Standardized Outcome Sets (ICHOM) with Additional Measures

While ICHOM sets provide a robust foundation, several interviewees suggested adapting or supplementing these standards to better meet specific needs. Ana Etges acknowledged the global influence of ICHOM in establishing a culture of value assessment but pointed out that the complexity of these sets might require simplification for local implementation. Sally Lewis also indicated that teams might wish to add specific data elements to address local priorities, provided that the core ICHOM measures are maintained, proposing also a hybrid approach that incorporates both standard and customized outcome measures.

> *"Some teams sometimes tell me, I would like to have this data, which is not in the ICHOM set. I say, okay, you collect ICHOM set and we put your data in addition to them."* Sally Lewis (Independent Healthcare Consultant)

Alternative Approaches to Measure Outcomes

Scott Wallace presented an alternative view, recommending a streamlined approach to outcome measurement that focuses on a few key indicators that truly matter to patients. The CCC Framework he proposed clusters all patient outcomes into three essential categories: Capability (the ability to perform meaningful activities), Comfort (the reduction of suffering), and Calm (minimizing disruptions in daily life). Wallace argued that by focusing on these patient-centered categories, healthcare providers can design solutions that directly address the outcomes most valued by patients and therefore perform a more targeted and actionable approach.

"The problem with the ICHOM measure sets is they're too big… One of our rules of thumb is don't ask unless you're going to do something about it."
Scott Wallace (Value Institute for Health and Care)

Furthermore, Elizabeth Teisberg advocated for a more personalized approach to outcome measurement, emphasizing the need to recognize and address individual patient needs. In her view, VBHC should prioritize outcomes that resonate with patients' personal goals and health aspirations. She explained that not all patients have the same needs, using the example of "frail" versus "frisky" elderly patients to illustrate how outcome measurement should adapt based on patient circumstances.

"If she's a frail elder, we're going to want to be thinking about these services, and then we'll personalize around that. And if she's a frisky elder, we're going to think about this set of services, and we'll personalize around that." Elizabeth Teisberg (Value Institute for Health and Care)

Teisberg further underscored the limitations of a one-size-fits-all model. She argued that by identifying these nuanced patient groups and their specific needs, healthcare providers can deliver care that is genuinely aligned with what matters most to each individual.

4.4. Institutional Change

Next, the interviews collectively emphasized the fundamental role of institutional change within healthcare settings. The experts especially advocated the importance of Leadership, Culture, Communication, and Education.

Leadership

In the context of the interviews, Sabrina Bernardez, Sally Lewis, and Bruna Zanatto contently highlight the importance of leadership as a first major step to achieving an institutional change that fosters VBHC. Firstly, Sabrina Bernardez noted that a successful, sustained implementation journey begins with securing buy-in from top leaders, who will play a pivotal role in setting the cultural tone. She further highlights that senior leadership must not only endorse the transition but also facilitate the requisite cultural transformation among healthcare professionals.

> *"The first step in the implementation process is to convince senior leadership as well as to foster institutional cultural change among healthcare professionals."* Sabrina Bernardez (Hospital Israelita Albert Einstein)

Furthermore, Sally Lewis points out that change within a healthcare organization not only depends on the executive endorsement alone but rather on the merge of "Champions" within the organization- individuals who lead from within and inspire colleagues. These champions, however, require both the resources and freedom granted by executive support to enact lasting change. Lewis paralleled this process to a ripple effect, where a few committed leaders gradually bring others on board, much like the viral spread of enthusiasm illustrated in the "Dancing Man" video, where one person's bold initiative inspires an entire crowd to join.

Bruna Zanatto further assents the pivotal role of physician leadership, stressing that the buy-in and active engagement of medical leaders are fundamental. She notes that without the influence of respected clinicians, it becomes challenging to sustain the motivation and ongoing education required for the transformation.

> *"Physician leadership is often the cornerstone of successful VBHC implementation."* Bruna Zanatto (HTANALYZE)

Culture

In order to effectively address culture in the implementation of VBHC, it is evident that a significant shift in mindset is required, one that affects all levels within a healthcare institution. Brian Mangan characterizes this as a "significant paradigm shift," emphasizing that adopting a VBHC model entails a profound transformation in the way healthcare professionals approach their work and outcomes rather than merely minor adjustments.

As Sally Lewis has observed, the shift is not limited to the clinical team but extends to all members of the organization, from managers to accountants, in order to cultivate a unified focus on value and patient-centered outcomes. She proposes that the cultural transformation must be spearheaded by "champions" at various levels of the organization, but that it must also receive substantial support from top-level management to ensure the availability of adequate resources and the freedom to facilitate VBHC initiatives.

Furthermore, Elizabeth Teisberg underscores the importance of fostering aspirations among healthcare professionals that prioritize "health, hope, and healing" as a guiding vision for VBHC. This reinforces the notion that cultural change must be deeply value-oriented and not merely operational.

Concurrently, Dr. Detlef Loppow proposes the establishment of a culture of transparency and data sharing within the Martini Clinic, wherein continuous improvement is driven by a commitment to transparency and accountability among medical professionals. He underscores the significance of aligning the appropriate individuals with the organization's values.

> *"You live in a company, a culture, and you attract those employees who can develop well in this culture. And those who can't develop well in it, they either leave on their own because they don't realize it, or you have to make them leave."* Dr. Detlef Loppow (Martinic Clinic)

This approach guarantees that the organization is comprised of individuals who genuinely align with the principles of VBHC, thereby fostering a robust and sustainable value-based culture.

Communication

Furthermore, the interviewees noted communication as a crucial factor in achieving this institutional change towards VBHC by promoting collaboration among physicians, the medical team, and patients. Virginie Luce-Garnier's approach underscores the value of open dialogues within medical teams, encouraging discussions on outcome differences to nurture a shared learning environment. This collaborative communication helps teams identify areas for gradual improvement, leading to more cohesive practices over time. This perspective emphasizes that continuous, open communication within teams can drive subtle but lasting changes in care processes and team dynamics.

> *“I only want them to discuss (...) And they will be able to work together effectively.”* Virginie Luce – Garnier (Hôpitaux de Paris)

Dr. Detlef Loppow also highlights the importance of engaging patients as informed participants in their care journey, especially in post-treatment monitoring. By tapping into patients’ personal knowledge of their health, the Martini Clinic facilitates valuable feedback that enhances quality control. Every six months, doctors meet to discuss patient outcomes, reinforcing a feedback loop that supports continuous improvement in patient care. This structured communication, both among doctors and with patients, strengthens the clinic’s commitment to VBHC, creating a system that is responsive to patient needs and guided by transparent quality metrics.

> *“Our doctors, every six months, sit together and get presented who has achieved what result quality with his patients. And that’s actually the big feature.”* Dr. Detlef Loppow (Martini Clinic)

Education & Engagment

To ensure that VBHC becomes deeply embedded in healthcare institutions, many interviewees argue that educational efforts need to start with students and future healthcare leaders. For

instance, Alba Boluda emphasizes this foundational approach by stating that VBHC principles at an early stage prepare the next generation of professionals to carry forward the cultural and structural shifts necessary for successful VBHC implementation.

“If we want VBHC care to work, it’s important that people—medical students, hospital managers—are familiar with the concept and prepared for a certain way of working.” Alba Boluda (One Clinic)

Beyond initial education, continuous engagement and learning for current healthcare professionals are essential to sustain these practices. Sabrina Bernardez, therefore, highlights that increasing knowledge and education to engage healthcare professionals is essential. This engagement is further reinforced by Bruna Zanatto, who points out that without committed leadership, it becomes challenging to foster the motivation and ongoing education of the healthcare team.

4.5. Financial Incentives

Bundled Payments

Among the interviewees, bundled payments emerged as one of the most favored financial models among the interviewees for achieving VBHC due to their focus on outcomes over volume. By consolidating payments for an entire episode of care or a specific time frame, bundled payments encourage a holistic approach and incentivize preventive care, especially in managing chronic conditions. Ana Etges underscored the effectiveness of bundled payments in promoting preventive care, particularly for chronic conditions like diabetes. This approach not only enhances patient outcomes but also reduces future hospitalizations, creating cost savings for healthcare systems.

“We can provide a bundle for diabetes care for a year (...) These expenses will be much more oriented to establish preventive care for these patients.”
Ana Etges (PEV Health Care Consulting)

Furthermore, Sabrina Bernardez highlighted the alignment of bundled payments with VBHC principles, emphasizing their role in fostering care coordination and accountability across the patient journey.

> *"Bundled payments provide a more holistic approach to improving outcomes and reducing costs in line with VBHC."* Sabrina Bernardez (Hospital Israelita Albert Einstein)

By covering the entire patient journey, this model encourages collaboration among providers and ensures that patients receive consistent and comprehensive care.

Elizabeth Teisberg further elaborated on the benefits of bundles for relationship-centered care. She highlighted that bundled payments allow medical teams to personalize care within a managed budget, optimizing outcomes and supporting relationships among the care team and the patient. According to Teisberg, bundled payments should adjust to the patient's needs, ensuring adequate support for complex cases through risk adjustments.

> *"You need bundles, you need to pay for whole care journeys, not just the parts and pieces (...) pay for a period of time for the whole team and that's the critical thing."* Elizabeth Teisberg (Value Institute for Health and Care)

Value-Based Contracting

Value-Based Contracting (VBC) focuses on tying payments to the achievement of specific health outcomes, thus holding providers accountable for patient results. This model is particularly promising but has faced challenges in adoption and regulatory support.

Hussein Rimmani pointed out that while VBC is a promising trend, it remains limited by regulatory and market constraints. He noted that bundled payments are currently more viable due to their scalability, positioning them as a transitional step towards broader adoption of VBC once regulatory structures are in place.

Moreover, Brian Mangan discussed the integration of suppliers in the value-based model, emphasizing how VBC establishes accountability between suppliers and healthcare providers. In

private healthcare settings, VBC can involve insurance companies and specific outcome-based contracts, allowing for standardized and trackable care delivery.

> *"Suppliers will come in, help support the delivery of approved patient care (...) and they will be held accountable through a contract for the delivery of that."* Brian Mangan (Luach Consulting Group)

Challenges with Capitation and Fee-for-Service Models

While capitation—where providers receive a fixed amount per patient—has been proposed as a potential solution for VBHC, it comes with significant challenges. Capitation requires careful outcome measurement to prevent rationing and inequities, as highlighted by Elizabeth Teisberg.

> *"If systems are paying per person per year, you're able to manage a budget, but that fails miserably if you're not measuring meaningful outcomes."* Elizabeth Teisberg (Value Institute for Health and Care)

She explained that when combined with fee-for-service elements, capitation can lead to a "pressure cooker" effect, where costs rise as fee-for-service elements drive demand within the fixed capitation budget.

Additionally, Dr. Detlef Loppow provided insights on Germany's experience with the fee-for-service (DRG) model, which limits hospital flexibility in delivering value-driven care.

> *"The hospital provider gets too little from the payor, too little from the country... But the patient expects the best possible result quality for which you simply need the full Pay-per-Service amount."* Dr. Detlef Loppow (Martini Clinic)

He contrasted this with the Netherlands, where flexible contracting with insurance companies enables bundled approaches that hospitals can manage across the care journey, which he sees as a more effective model.

Organizational vs. Individual Incentives

A recurring theme was the need for financial incentives at the organizational level rather than the individual physician level. Several interviewees argued that individual incentives can lead to ethical dilemmas, such as "cherry-picking" patients with favorable prognoses.

Sally Lewis expressed strong opposition to individual financial incentives for physicians, warning of potential unethical behavior:

> *"I don't believe that medical doctors should ever be personally given a financial incentive for patient care... it creates real ethical issues."*
> Sally Lewis (Independent Healthcare Consultant)

Instead, she suggested that incentives should focus on overall outcomes achieved by the organization, thus fostering a collective responsibility for patient-centered care. Virginie Garnier also proposed an alternative approach to financial incentives, focusing on transparency and collaboration rather than direct outcome rewards, stating that medical teams should be rewarded if they work transparently and share the data. Her perspective emphasizes that financial savings should follow from quality improvements, with the primary focus on enhancing patient care.

In summary, bundled payments and value-based contracting emerged as the most favored financial models for advancing VBHC, with a preference for organizational incentives over individual incentives. However, practical and regulatory challenges, as well as ethical considerations, continue to shape the implementation of these models across different healthcare systems.

4.6. Infrastructure & Technology

Data Infrastructure

An essential part of implementing VBHC is a solid infrastructure to capture, for instance, real-time patient outcomes accurately. Hussein Rimmani emphasized the foundational need for technology. Real-time data collection ensures that healthcare providers can promptly adjust treatments based on patient feedback, facilitating better outcomes and enhanced quality of care. However, Virginie Garnier pointed out the challenges associated with building this infrastructure due to limited funding. She began working on VBHC in 2018 with limited support, and although there has been some progress, the implementation process is still in its early stages due to a lack of financial and organizational support.

"We have a lack of support and money for it. It's expensive because we need investment in IT to collect prompts and to have a structured database." Viginie Luce-Garnier (Hôpitaux de Paris)

AI and Analytics for Reducing Disparities

Beyond data collection, there is a growing emphasis on using AI to enhance outcome analysis and reduce disparities in care. Elizabeth Teisberg stressed the importance of targeting lower-performing segments within healthcare outcomes to improve overall quality and equity. By identifying and addressing patterns in the lowest quartile of outcomes, AI can help healthcare providers uncover the root causes of inequities and make targeted improvements. "What we really want to do is get them to focus like crazy and use all of the analytical power to understand what the heck is going on in the bottom 25 percent of that curve." Elizabeth Teisberg (Value Institute for Health and Care)

In addition, Alba Boluda highlighted the need for interoperability within data systems to facilitate effective benchmarking and quality comparisons across institutions, suggesting centralized registries as a model as seen in the Netherlands, where hospitals collect data in their own way but have an obligation to enter data into a registry allowing benchmarking and reporting at a national level.

5. Conclusion

The transition to VBHC represents a fundamental shift from traditional volume-driven models to a patient-centered approach that emphasizes quality outcomes and cost efficiency. This thesis introduced the "Hammer-Throw Model" as a dynamic framework designed to address the limitations of linear implementation strategies, providing healthcare organizations with a flexible, iterative roadmap for sustainable VBHC adoption. Drawing from an extensive literature review and high-profile expert interviews, this model integrates critical elements such as patient-centered care, cost measurement, and institutional cultural change. The findings indicate that successful VBHC implementation requires a balanced focus on aligning financial incentives, fostering leadership commitment, and leveraging technology for real-time outcome measurement.

The dynamic, self-guiding “Hammer Throw Model” focuses on a continuous improvement cycle that comprises five iterative phases: Preparation & Design, Execution, Improvement and Rollout. Each phase builds on the previous one, allowing for the integration of real-time data, adjustments based on patient outcomes, and refinement of strategies that adapt to the individual healthcare landscape of healthcare organizations. By using this dynamic framework, healthcare providers can more effectively overcome systemic barriers, optimize resource allocation and improve patient outcomes. Applying this model to chronic disease management, particularly hypertension, further emphasizes its scalability and potential for broader impact. The work concludes that a holistic, patient-centred approach, supported by a robust data infrastructure and multidisciplinary collaboration, is essential. Iterative processes, rather than a linear implementation approach, are therefore essential for sustainable healthcare transformation.

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7. Appendices

Appendix 1: Overview Financial Incentives

(1) Pay-for-Performance (P4P) schemes reward providers for meeting specific performance benchmarks, including patient health outcomes, adherence to clinical guidelines, and patient satisfaction scores. These benchmarks may include patient health outcomes, adherence to clinical guidelines, and patient satisfaction scores. By directly linking financial rewards to the quality and efficiency of care provided, P4P schemes encourage health care providers to enhance service delivery and align closely with best clinical practices. P4P schemes have been shown to improve health care outcomes by incentivizing high-quality care (Scott et al., 2018).

(2) Capitation Payments: providers receive a fixed fee per patient over a set period, covering all required health services. This prepayment is based on the predicted health care costs for a patient population and encourages providers to focus on maintaining overall patient health. By managing patient care within this budget, providers can increase profitability, thus motivating them to achieve better health outcomes through efficient resource utilization (Conrad, 2015).

(3) Bundled Payments entail the issuance of a single consolidated payment to cover all services and procedures associated with a particular treatment or condition over a specified period. This approach provides an incentive for providers to eliminate unnecessary services and coordinate care effectively, as they are compelled to operate within a predetermined financial envelope. The bundled payment model has been shown to foster cost containment and quality improvement (Scott et al., 2018).

(4) In **Shared Savings Programs (SSP),** provider groups are assigned a baseline budget derived from historical cost data. If providers deliver cost-efficient care that meets or exceeds quality benchmarks, they share in the savings realized below this cost baseline. This model not only promotes cost efficiency but also encourages providers to meet specified quality criteria

to benefit financially, aligning provider incentives with broader health system goals (Kesteloot & Voet, 1998).

(5) Global Budgets allocate a fixed total budget for all health care services needed by a specific population over a certain period, typically a year. This fixed budget compels providers to work within strict financial limits while striving to meet the health care needs of the community effectively. Such constraints promote strategic resource management and care coordination, crucial for controlling costs and improving service delivery quality.

(6) Value-Based Pricing is a model of health care payment that ties compensation for health care services, including pharmaceuticals, to the clinical value they provide. This model bases compensation on the effectiveness of health care products and services in real-world applications, encouraging the adoption of innovative and highly beneficial products and services. By linking payment to clinical outcomes, this approach ensures that only the most beneficial innovations are incentivized, fostering an environment where patient benefit is paramount.

(7) Fee-for-Service with Quality Adjustments: In the past, fee-for-service (FFS) models have typically rewarded providers based on the volume of services provided. However, with the incorporation of quality adjustments, this model has begun to integrate aspects of pay-for-performance (P4P) by offering bonuses for achieving quality targets and imposing penalties for poor performance. This modified FFS model reduces the incentives for excessive service provision by incorporating quality metrics into the payment structure, thus promoting care quality alongside volume control.

Appendix 2: Financial Incentives Evaluation

Payment System	Pay-for Performance	Capitation	Bundled Payments	Shared Savings	Global Budget	Value Based Pricing	Fee for Service
Definition	Providers are rewarded for meeting specific quality and efficiency benchmarks.	Fixed amount paid per patient per time period, regardless of number of services provided.	Single payment for all services related to a specific treatment or condition.	Providers share in savings achieved if spending is below a benchmark.	Fixed budget for all health care services over a set period for a specified population.	Payments linked to the effectiveness and value of the care provided.	Providers are reimbursed for each service they perform.
Payment Basis	Based on performance measures.	Per patient, per period.	Per episode of care.	Based on savings achieved.	Per institution, annually.	Based on care value.	Per service rendered.
Incentives	Promotes high-quality care and improved patient outcomes.	Focus on preventive care and efficiency.	Encourages cost-efficiency and quality in specific episodes.	Incentivizes cost reduction below a set benchmark.	Limits total expenditure, incentivizes cost-effective care.	Incentivizes high-quality, effective care.	Encourages higher volume of services.
Advantages	Encourages excellence in health care provision and patient satisfaction.	Simplifies billing, incentivizes cost control.	Promotes collaboration among providers.	Rewards cost-effective care management.	Encourages comprehensive budget management.	Aligns costs with outcomes, promotes better patient care.	Straightforward, ensures compensation for each service provided.
Disadvantages	Can lead to focus on measurable metrics at the expense of holistic care.	Risk of under-provisioning care.	Limited to predictable episodes; complex to administer.	Complexity in setting benchmarks and sharing mechanisms.	May limit resources for necessary but costly interventions.	Determining value can be complex and subjective.	May lead to unnecessary services; does not prioritize efficiency.
Alignment with VBHC	**High;** rewards meeting quality and efficiency benchmarks.	**Moderate;** incentivizes overall care efficiency and prevention.	**High;** focuses on quality and cost efficiency for specific episodes.	**Moderate to High;** promotes overall cost efficiency and savings sharing.	**Moderate to High;** incentivizes cost-effective management of care.	**High;** directly links payments to the quality and effectiveness of care.	**Low to Moderate** primarily volume-focused if not complemented with quality outcome metrics.

Appendix 3a: List of experts selected and contacted

Name	Organization	Function
Alba Nicolás-Boluda	One Clinic	Head of Medical Project & Strategy
Ana Paula Beck da Silva Etges	PEV Health Care Consulting	Board MemberPEV Health Care Consulting
Brian Mangan	Luach Consulting Group	CEO
Bruna Stella Zanotto	HTANALYZE-Health Economics and Health Technology Assessment	Health Care Business Analyst
Claire Chabloz	Johnson & Johnson MedTech	Medical Director
Denisa Widyaputri	Think Policy Indonesia	Health Policy Associate
Dr. Detlef Loppow	Martini Clinic	CEO
Dr. Reem Bunyan	Global Innovation Hub for Improving Value In Health	Executive Director
Ebele Anidi	Global Innovation Hub for Improving Value In Health	Director of Partnerships & Engagement
Elizabeth Teisberg	Value Institute for Health and Care	Executive Director
Erik Normann	Uppsala University Sweden	Affiliated Researcher
Gregory Katz	Université Paris Cité	Chair of Value in Health
Griffin Myers	Oak Street Health	Co-Founder
Hussein Rimmani	Roland Berger	Medical Doctor
Juliana Bersani	Outcomes Based Healthcare	Co-Founder and COO
Lucien Engelen	TransformHealth	CEO
Marcia Makdisse	Mãe de Deus Hospital	VBHC Educator, Mentor & Consultant
Michel Mohler	Lyfegen	Founder & CFO
Raquel Correia	PromTime	Chief Medical Officer
Robert McGough	Hill Dickinson LLP	Partner
Sabrina Bernardez	Hospital Israelita Albert Einstein	Product Owner
Sally Lewis	Independet Healthcare Consultatnt	Consultant
Scott Wallace	Value Institute for Health and Value	Managing Director
Silvia Neves Moreira	Silvia Neves Moreira	Director
Virginie Luce-Garnier	Hôpitaux de Paris	President
Verena Voelter	5P Health Care Solutions Inc.	CEO & Founder

Appendix 3b: List of interviewees

Name	Organization	Function	Date
Alba Nicolás-Boluda	One Clinic	Head of Medical Project & Strategy	03.10.2024
Ana Paula Beck da Silva Etges	PEV Health Care Consulting	Board Member PEV Health Care Consulting	11.09.2024
Brian Mangan	Luach Consulting Group	CEO	25.09.2024
Bruna Stella Zanotto	HTANALYZE-Health Economics and Health Technology Assessment	Health Care Business Analyst	27.09.2024
Dr. Detlef Loppow	Martini Clinic	CEO	29.10.2024
Elizabeth Teisberg	Value Institute for Health and Care	Executive Director	10.10.2024
Hussein Rimmani	Roland Berger	Medical Doctor	03.09.2024
Lucien Engelen	TransformHealth	CEO	10.09.2024
Sabrina Bernardez	Hospital Israelita Albert Einstein	Product Owner	24.09.2024
Sally Lewis	Independet Healthcare Consultatnt	Consultant	01.10.2024
Scott Wallace	Value Institute for Health and Value	Managing Director	20.09.2024
Virginie Luce-Garnier	Hôpitaux de Paris	President	03.10.2024

Appendix 4a: Demographics of Interviewees, *Study May 2024*

Name (including Title)	Practicing for	Position in Health Care Sector	Type of Institution
Dr. Annette Sommerfeld	>10 years	Chief doctor	Hospital, Hamburg
Dr. Lily Eisenhut	>10 years	Medical Doctor	Praxis, Hamburg
Dr. Brigitte Nebel	>20 years	Chief Doctor	Hospital & Praxis, Hamburg
Katharina Holzmann	< 5 years	Medicine Trainee	Hospital, Munich
Dr. Wolfgang Tressel	> 20 years	Chief Doctor	Hospital, Augsburg
Dr. Thomas Hainzinger	> 5 years	Medical Doctor	Own Praxis, Munich
Dr. Alexander Wiedemann	> 20 years	Medical Doctor, Politics	Own Praxis, Munich
Toska Wiedemann	< 5 years	Medicine Trainee	Hospital, Frankfurt
Prof. Dr. Med. Ingo Sobottka	> 20 years	Microbiologist	Former Practitioner at Martini Clinic, Hamburg
Dr. Carsten Preiß	> 20 years	Chief Doctor	Hospital, Hamburg
Malin Sauer	< 5 years	Medicine Trainee	Hospital, Hamburg
Isabel Schneider	< 5 years	Medicine Trainee	Hospital, Hamburg

Appendix 4b: Questionnaire for Qualitative Research Design, *Study May 2024*

1. Do you have experience with value-based healthcare (VBHC)?
- Yes
- No

2. Do you believe that financial incentives improve the quality of healthcare?
- Yes
- No
- Unsure

3. What deficits do you see in the German healthcare system, particularly with regard to cost factors and the efficiency of the healthcare system?
[Free text]

4. Which of the following financial incentive models do you consider most suitable for the introduction of Value-Based Health Care (VBHC) in Germany? (select at least 2 answers) Rank?
- Pay-for-Performance (P4P)
- Capitation payments
- Bundled payments
- Shared Savings Programs (SSP)
- Global budgets
- Value-Based Pricing
- Fee-for-Service with Quality Adjustments

5. Have you had experience with one or more of these VBHC incentive models?
- Have you?
- No
- If yes, which models have you used and how do you rate their effectiveness in improving patient care/cost efficiency?

6. What factors influence your choice of incentive model? (multiple choice possible)
- Financial benefits
- Ease of implementation
- Support from the administration
- Patient satisfaction
- Clinical autonomy
- Other: ____________________

7. What specific challenges do you see in the implementation of VBHC incentive models in Germany?
[Free text]

8. In your opinion, what further measures or support would be necessary to increase the acceptance and effectiveness of VBHC in Germany?
[Free text]

9. Other comments and thoughts for the future:

Appendix 4c: Insights of the Interview Answers, *Study May 2024*

Name	Pre-Question	Question 1	Question 2	Question 3	Question 4	Question 5
Dr. Alexander Wiedemann	No	Unnecessary hospital admissions.	P4P	Patient Satisfaction, Clinical Autonomy	It´s difficult to actually measure the outcomes, or symptoms, as they are very subjective. For example, each person has a different perception of pain.	Once the measurement of outcomes can be assured as objectively as possible, many doctors would make the transition to the VBHC approach.
Dr. Anette Sommerfeld	No	Digitalization, no central control, everyone does what they want.	P4P, Value Based Pricing, Bundled Payments	Ease of implementation, patient satisfaction.	No central control or management.	More money in the health care system.
Dr. Brigitte Nebel	No	Corporate medicine, too few family doctors, too little preventive medicine.	P4P, Bundled Payments	Financial Benefits, Ease of Implementation, Patient Satisfaction.	Financial underfunding of the health system.	Adequate comprehensive family doctor care.
Dr. Carsten Preiß	No	Payment for procedures without seeing the person with their illness and deficits.	Value-Based Pricing, Bundled Payments	Financial Benefits, Ease of Implementation, Administrative Support, Patient Satisfaction, Clinical Autonomy.	How much money is in the system? Who determines payment for services? Who evaluates performance? Previously influential institutions rarely represent the interests of service providers.	Discussions between patients, service providers in practices and clinics as well as health insurance companies and politicians in order to create a transparent system that once again puts the patient in the foreground.
Dr. Lily Eisenhut	No	Specialist-heavy, very high incentive to carry out unnecessary invasive or profitable procedures. Speaking medicine is very underfunded.	Value-Based Pricing, Fee-for Service with Quality Adjustments	Ease of implementation, administrative support, patient satisfaction.	Lobbyists.	A better interoperability between providers and a better IT-infrastructure.
Dr. Thomas Hainzinger	No	There is significantly more incentive to carry out measures (surgery, examinations, etc.) that are better compensated than for things that are medically sensible in the individual situation. In the best case, this only costs the health insurance companies money (e.g. pointless, far too frequent examinations of the carotid arteries). In the worst case, patients are persuaded to undergo an unnecessary operation (e.g. TKA) or examination (e.g. cardiac catheter), which then leads to serious complications.	Capitation Payments, Bundled Payments, Value-Based Pricing	Financial benefits, ease of implementation.	Resistance from the specialist medical profession, as carrying out unnecessary, expensive examinations is no longer likely to be profitable. Many medications have no real benefit in absolute terms, but are mainly expensive. An even stricter cost/benefit assessment would be good here - but the pharmaceutical lobby might not like that.	Expansion of the primary doctor system.
Dr. Wolfgang Tressel	No	There can be no real competition if prices for all services are fixed and the same for everyone. Medical services are often used unnecessarily or more than necessary. There would also have to be incentives for service recipients NOT to use services or at least cost transparency for patients, which is not the case in the area of statutory health insurance companies.	P4P, Bundled Payments	Financial benefits, ease of implementation.	Measurement of actual quality.	Better cost transparency for providers and those treated.
Isabel Schneider	No	Too much pressure to make financial profit with poor remuneration per patient leads to time pressure and poorer treatment.	Value-Based Pricing, Bundled Payments	Patient satisfaction, clinical autonomy.	Practical implementation without patient treatment suffering.	Sufficiently compensated time per patient.

Katharina Holzmann	No	As a medical student in particular, I particularly notice the high level of stress placed on interns, who initially have to spend a lot of time during their training correctly documenting the services provided instead of being able to concentrate on medical content. What was also disillusioning for me was that in everyday clinical practice there is little time left for personal care of patients due to a very tight staffing position. In addition, a very short length of stay is planned for each patient, which is why, in my opinion, patients are often discharged too early. I see this as problematic, particularly with regard to an increasingly aging, often multimorbid patient population, as the often necessary, complex follow-up care often cannot be provided at all or cannot be provided to the same standard as in the hospital.	Value-Based Pricing	Patient satisfaction, clinical autonomy.	Good measurement tools to assess quality.	Financial incentives for clinics to switch to this model.
Malin Sauer	Yes	In practices in particular, not all services are paid for (especially if patients appear several times per quarter). This means that more patients have to be treated in a short period of time. Unfortunately, this affects the quality of detailed advice and diagnostics for the patient.	P4P, Value-Based Pricing, Fee-for Service with Quality Adjustments	Financial Benefits, Ease of Implementation, Administrative Support, Patient Satisfaction, Clinical Autonomy.	Politics, health insurance companies (different cost coverage).	Subsidies, informing the population about the opportunities and risks of VBHC, information about how it directly affects the patients themselves.
Prof. Dr. Med. Ingo Sobottka	Yes	Quality is not rewarded enough, sales are too dominated by quantitative factors (e.g. DRG system).	P4P, Capitation Payments, Bundled Payments, Fee-for Service with Quality Adjustments	Ease of implementation, administrative support.	Since diagnoses in medicine are made through laboratory services in around 70% of cases, VBHC incentive models must sufficiently recognize laboratory services.	All sectors of medical care must be financially taken into account according to their importance.
Toska Wiedemann	No	Patient care is partly inadequate because remuneration is based on DRG. More emphasis is placed on quick, efficient processing of patients than on long-term care.	P4P, Value-Based Pricing	Administrative support, patient satisfaction.	Models would have to be introduced across the board for all hospitals in order to create comparability and increase acceptance; measuring patient satisfaction is difficult and subjective.	Less bureaucracy, create positive incentives instead of punishments if a goal cannot be achieved.

Pre-Question: Do you have experience with value-based health care in your daily work?

Question 1: What deficiencies do you see in the German health care system, particularly with respect to cost factors and the efficiency of the health system?

Question 2: Which of the following financial incentive models do you consider to be most suitable for introducing Value-Based Health Care in Germany?

Question 3: What factors influence your choice of incentive model?

Question 4: What specific challenges do you see when implementing VBHC incentive models in Germany?

Question 5: What further measures or support would be necessary to increase the acceptance and effectiveness of VBHC in Germany ?