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Introducing a Self-Guiding Implementation Plan for Value-Based Health Care: Introducing the "Hammer Throw Model" as an iterative implementation plan for a sustained effectiveness

Tiziana Sophia Wiedemann (58169)

Work project carried out under the supervision of:

João Marques Gomes

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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. Self-Guiding Implementation Plan

Building on the theoretical insights and interview findings explored in the previous chapters, which provided a comprehensive overview of the current landscape of VBHC, this chapter introduces a revolutionary implementation framework. Drawing on insights from high-profile interviewees, we will first outline a theoretical model, followed by its tailored application to chronic disease management.

4.1. Hammer-Throw-Model

The implementation of VBHC is a complex, transformative endeavor that healthcare organizations must approach with strategic precision. To successfully embed VBHC principles into clinical practice, it is essential to have a robust and adaptable implementation plan. However, most existing plans rely on linear, step-by-step models, which often fall short of capturing the dynamic nature of healthcare environments (Daniels et al., 2022). These traditional approaches do not fully account for the intricate interactions between multidisciplinary teams, the variability of patient needs, and the ever-evolving landscape of healthcare delivery. Thus, a new approach is required—one that is more aligned with the realities of healthcare settings, where flexibility, adaptability, and continuous refinement are key to success.

In developing a more dynamic implementation framework, we draw inspiration from the sport of hammer throw, a metaphor that encapsulates the blend of theory, technique, and iterative practice required for successful VBHC implementation (Figure 1). In this model, the hammer itself will symbolize the theoretical knowledge of VBHC. This knowledge alone, however, is insufficient to achieve meaningful change unless it is paired with the right technique. Just as the hammer thrower must harness precise movements to propel the hammer forward, healthcare organizations must employ the correct methodologies and strategies to translate VBHC theory into effective practice. By adopting this dynamic, iterative model, healthcare organizations can better align their strategies with the fluid realities of clinical practice, leading to a more successful integration of value-based care principles. The following sections will provide a detailed breakdown of each phase, illustrating how this innovative approach can drive meaningful improvements in patient outcomes and operational efficiency.

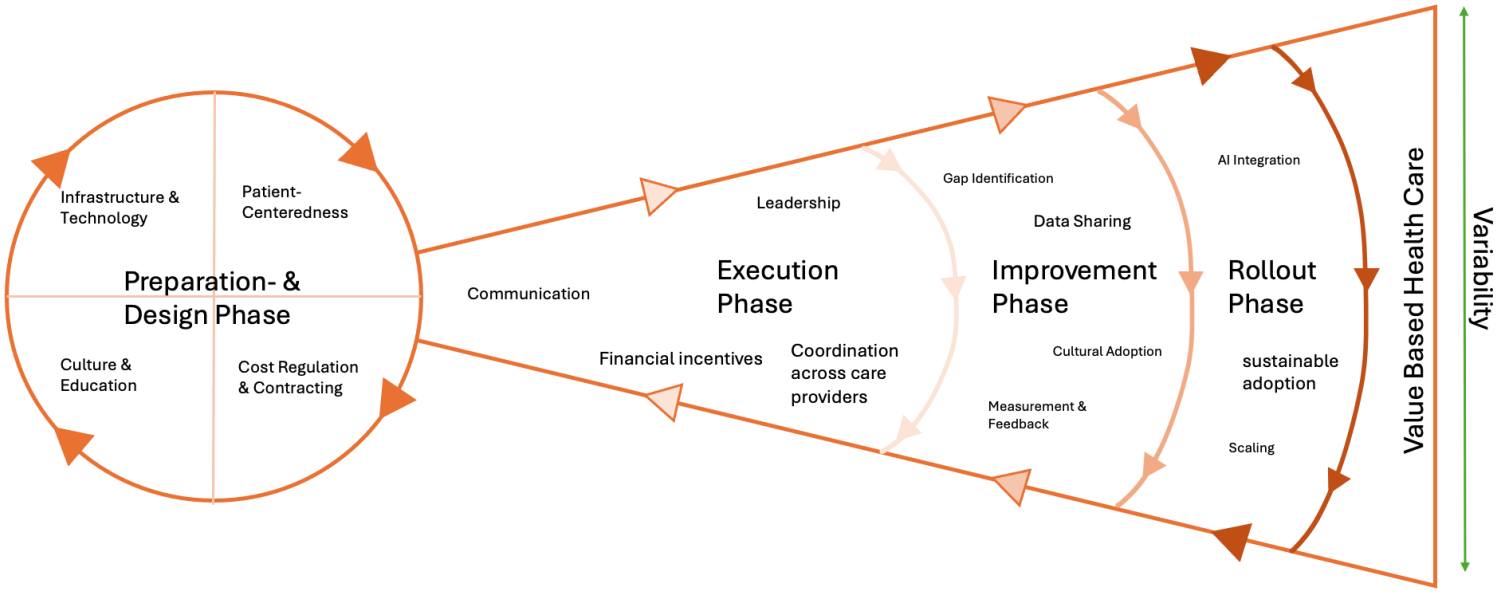

Figure 1: "Hammer Throw Model" for a sustainable VBHC implementation

Phase I & II: Preparation & Design Phase

The athlete begins by establishing a solid stance within the throwing circle, symbolizing the foundational steps in preparing for VBHC implementation. This phase, akin to setting the groundwork for healthcare transformation, involves gaining a deep understanding of VBHC

principles, engaging key stakeholders, and aligning organizational objectives with the overarching goal of value creation. The athlete then initiates a series of rotations, using a complex heel-to-toe movement to build momentum. These rotations represent the critical "Preparation & Design Phase" of our VBHC implementation model. During this phase, the organization concentrates on four key elements: infrastructure & technology, patient-centeredness, culture & education, and cost regulation & contracting. Each rotation incrementally increases the system's capacity for change, much like how the hammer's velocity increases with each spin.

Infrastructure & Technology involves developing tools for real-time outcome measurement and ensuring data interoperability across platforms. Although this typically requires significant upfront investment, it can also start with simpler solutions, as seen in the case of the Martini Clinic, which began by tracking outcomes using a basic Excel sheet.

Patient-Centeredness focuses on laying the groundwork for patient involvement and education, thus preparing patients for the transition to VBHC. This foundational work ensures that patients are not just passive recipients of care but active participants in their healthcare journey.

Culture & Education emphasizes building internal capabilities through targeted training programs and piloting VBHC practices. It is crucial to initiate cultural and mindset shifts among caregivers early on, especially as they prepare for changes in reimbursement models and adopt VBHC principles. Securing senior leadership support and promoting cultural change across all levels of staff are essential steps in creating champions for VBHC, who can drive the transformation forward within the organization.

Establishing **Time-Driven Activity-Based Costing** (TDABC) as a cost measurement method is recommended as an initial step before fully launching VBHC initiatives. TDABC provides detailed insights into where resources are spent, enabling healthcare providers to understand costs associated with each step in the care pathway. As Ana Etges highlights,

> *"Without a clear understanding of costs, it's difficult to set appropriate reimbursement levels or manage financial risk effectively."*

Therefore, using TDABC not only informs reimbursement strategies but also ensures financial sustainability and precision in managing chronic diseases under the VBHC framework.

However, a sustainable effort can only be achieved if the foundation is understood and continually adjusted in the form of **value-based contracts**. This can include bundled payments, where a single payment covers all services related to a patient's episode of care, or models where reimbursement is linked to patient outcomes. These models must be tailored to the specific needs of the healthcare system and ensure that they support VBHC goals while maintaining financial viability and risk sharing.

By addressing these foundational elements, organizations will create a robust base that supports the long-term, sustainable success of their VBHC initiatives, ensuring readiness for the subsequent phases of implementation.

Phase III: Execution Phase

Upon reaching optimal momentum, the athlete releases the hammer towards the target area, symbolizing the transition to the "Execution Phase." In this phase, healthcare organizations prioritize leadership, effective communication, and data sharing to facilitate the rollout of VBHC initiatives. However, as in the hammer throw, this release is not a final step but rather a part of a continuous process. Once the hammer (representing the accumulated knowledge and effort) lands, the organization returns to the design circle, revisiting foundational elements to refine and enhance their strategies. During this critical Execution Phase, healthcare organizations focus on several key components to ensure the successful implementation of VBHC:

Establishing clear and effective **communication** channels is essential for the success of VBHC initiatives. This phase must be driven by motivated **leadership** that champions the change, guiding teams through the complexities of shifting towards value-based care. Transparent

communication from leadership ensures that all stakeholders are aligned with the VBHC objectives and fosters a culture of collaboration.

To fully integrate VBHC, it is crucial to **coordinate efforts across the entire care pathway**. This means fostering collaboration between various healthcare providers, from primary care physicians to specialists and support staff, ensuring that patient care is seamless, and outcomes are optimized. By breaking down silos, organizations can create a more cohesive approach to patient management, where information flows freely, and each provider contributes to achieving value-based outcomes.

During the execution phase, healthcare organizations should start implementing new payment models that align **financial incentives** with VBHC goals. Drivers for a sustainable and constant shift to VBHC are the practitioners and hospital leaders themselves. Employing agency theory in VBHC helps mitigate information asymmetry between patients (principals) and healthcare pro-viders (agents), structuring incentives that compel providers to act in the best interests of pa-tients, emphasizing health outcomes over service volume (Conrad, 2015).

First Steps for Implementation: It is advisable to begin with areas where there is already enthusiasm and potential for quick wins. By targeting departments or conditions that are ready for change, organizations can build momentum and showcase early successes. This can create a ripple effect, encouraging other areas to adopt VBHC practices as they see tangible benefits.

Much like the precise release of the hammer in the throw, the phase requires careful timing, coordination, and alignment. Yet, even after the hammer has been released, the athlete's performance is reviewed and analyzed for future improvement. Similarly, healthcare organizations must continuously monitor outcomes and revisit initial strategies to optimize their VBHC improvement, ensuring they remain adaptable and responsive to new challenges and opportunities.

Phase IV: Improvement Phase

Following the Execution Phase, the healthcare organization moves into the "Improvement Phase." At this stage, the focus shifts to **gap identification**, **patient outcomes and measurement**, **continuous improvement**, and **patient engagement and education**. This phase mirrors the thrower's subsequent attempts to refine their technique after the initial release. Just as an athlete makes adjustments to improve performance, healthcare organizations must revisit their strategies to enhance the effectiveness of their VBHC initiatives. This may involve refining contracting details, fostering deeper cultural engagement among staff, and integrating lessons learned from earlier phases. The improvement cycle ensures that VBHC principles are being effectively adapted to the organization's specific context, setting a strong foundation for scaling efforts.

To achieve meaningful improvements, organizations must focus on **Patient Outcomes and Outcome Measurements**. Utilizing standardized tools like the **ICHOM (International Consortium for Health Outcomes Measurement) sets**, healthcare teams can track outcomes that matter most to patients, such as quality of life, functional status, and long-term health. By measuring these patient-centered outcomes, providers gain a clearer understanding of the impact of their interventions and can adjust their strategies accordingly.

The concept of the **'implementation braid'**, which links culture, strategy and measurement, becomes critical to continuous improvement. This approach ensures that cultural change, strategic goals and data-driven insights are not siloed, but integrated into a cohesive framework for continuous improvement. By regularly revisiting these elements, organisations can maintain momentum and drive long-term improvements in patient care.

Patient Engagement and Education also play a pivotal role during this phase. Continuously involving patients in the improvement process ensures that their voices are heard and that outcome measures align with their individual goals and priorities. Educational initiatives that

empower patients to take an active role in their healthcare journey can lead to better adherence to treatment plans, ultimately improving health outcomes.

Just as the athlete returns to the circle for another try and refines his technique to achieve a better result, the hospital, having completed this phase, cycles back to the preparation and design phase to continuously improve and eventually move on to the next stage of VBHC implementation.

Step V: Rollout Phase

Once the organization has optimized its approach, it advances to the "Rollout Phase." This final phase is analogous to the athlete's subsequent throws, where the goal is not only to maintain accuracy but also to achieve greater reach and impact. Here, healthcare organizations focus on **scaling VBHC practices** across multiple departments and locations, ensuring that the principles are consistently applied and sustained throughout the organization. Just as the athlete refines their technique with each attempt, healthcare providers aim to expand their VBHC initiatives without compromising quality.

By using AI technology to analyse large data sets, organisations can identify variations in patient outcomes and target areas for improvement, particularly where performance has lagged. This data-driven approach enables a more refined and responsive VBHC strategy, ensuring that every department benefits from the insights gained.

Lastly, the organization works to embed VBHC practices into its regular routines, creating a culture of **continuous improvement**. Much like the athlete's multiple throws, healthcare organizations are encouraged to revisit earlier phases, refining their strategies and building upon past successes to ensure long-term, sustained impact in value creation.

This hammer throw-inspired model represents a paradigm shift in VBHC implementation by embracing the inherent complexity and fluidity of healthcare systems, allowing organizations

to continuously refine their strategies through iterative cycles that foster sustained, data-driven improvement across diverse clinical settings.

4.2. Applying the Self-Guiding Framework for Chronic Disease Management

Having outlined the theoretical implementation plan for VBHC, the next step is to translate it into a practical approach for managing chronic diseases. The aim is to provide a clear, actionable framework that helps healthcare providers integrate VBHC principles into their daily practices. As Scott Wallice stated,

> *"We're going to propose something. We're going to measure the result and then we're going to see, did it work? And if you don't do that kind of investigation, then you've frozen healthcare where it is right now forever and for more."*

This iterative process of testing, evaluating, and refining is crucial, especially for managing chronic conditions like hypertension and diabetes, which are common in nearly all healthcare settings. Hypertension is an ideal starting point for VBHC implementation due to its widespread prevalence, well-established management protocols, and measurable outcomes. It contributes significantly to healthcare costs and affects a large number of individuals, making it a major burden on healthcare systems. According to the first comprehensive global analysis of hypertension trends, the number of adults aged 30–79 with hypertension has risen from 650 million to 1.28 billion over the past 30 years (WHO, 2021). It is a leading cause of premature death worldwide, affecting over a billion people, including 1 in 4 men and 1 in 5 women. In the U.S., nearly half of adults (119.9 million) have high blood pressure, with 3 in 4 of them (92 million) having it uncontrolled. The annual costs related to hypertension are estimated at $79 billion, and individuals with the condition incur medical costs up to $2,500 higher than those without it (CDC, 2024). The burden of hypertension is especially pronounced in low- and middle-income countries, where two-thirds of cases are found, driven by rising risk factors in those populations.

Hypertension management is standardized across hospitals, with well-established treatment protocols that make it a strong candidate for VBHC. Its clear treatment pathways—lifestyle changes, medication, and monitoring—align with VBHC's focus on improving outcomes and cost-efficiency (Porter, 2010). The combination of high volume, standardization, and cost impact positions hypertension as a prime candidate for a VBHC approach.

However, not all hospitals are equipped to implement this self-guiding framework immediately. Factors such as technological infrastructure, organizational readiness, and motivation can vary significantly between institutions. Some may need to invest in foundational elements, like upgrading information systems or enhancing change management processes, before they can fully embrace VBHC's iterative approach. Figure 2 presents an implementation plan that seamlessly integrates a straightforward approach for hospitals with the hammer throw model. This plan not only ensures alignment with the model's principles but also promotes sustainable implementation through iterative processes and dynamic outcomes.

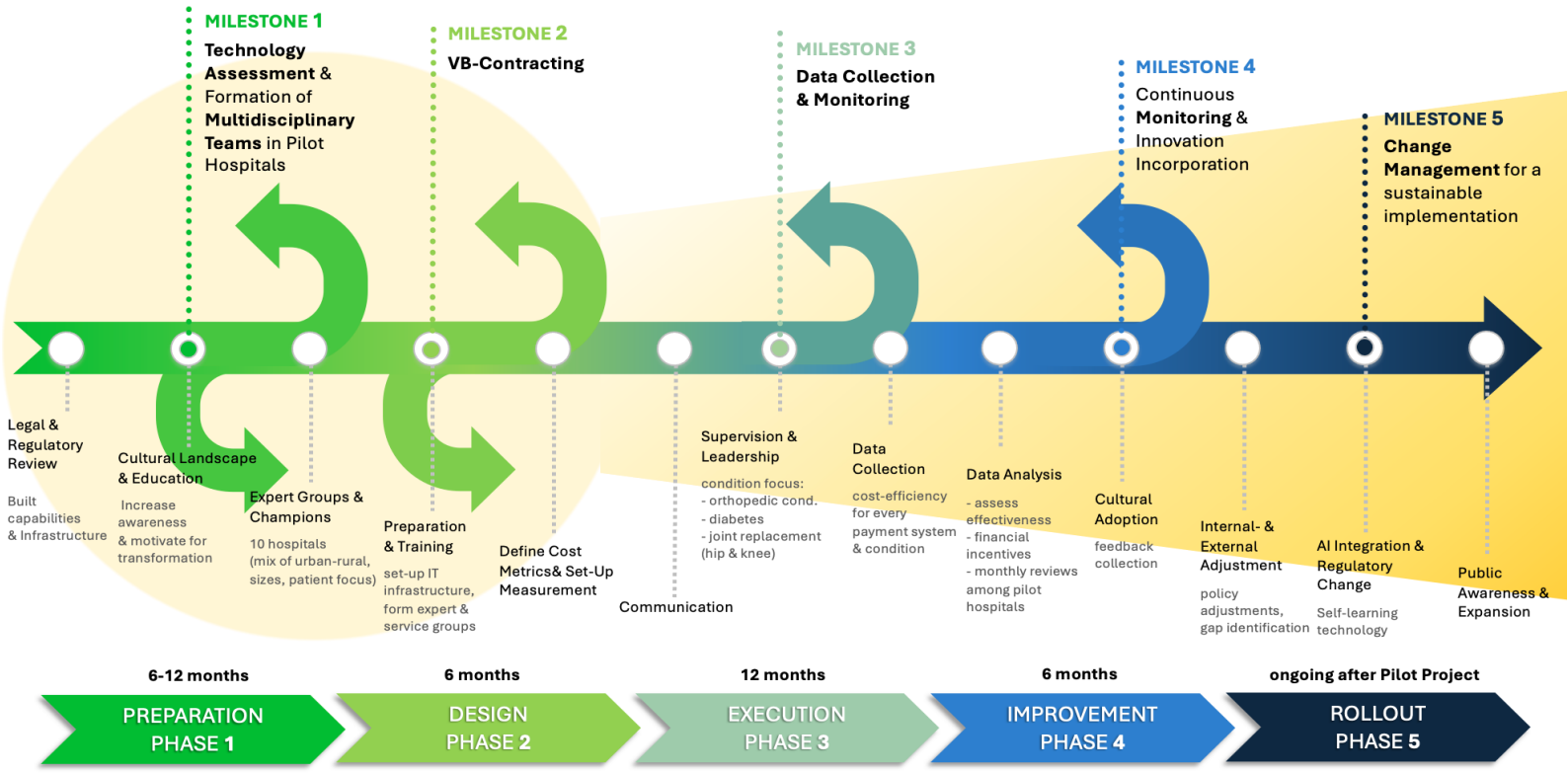

Figure 2: Iterative Implementation Plan

Phase I & II: Preparation & Design Phase

Infrastructure & Technology: Integrating electronic health records (EHR) with devices that track blood pressure remotely, such as connected cuffs and mobile health apps, allows continuous monitoring of patient data. This data can be automatically uploaded to the patient's medical record, providing healthcare providers with instant access to the patient's condition. While initial investments in sophisticated platforms like hospital-wide patient management systems can be substantial, starting with simpler solutions like Excel sheets for data tracking, as seen in some healthcare pilot projects, is a practical and cost-effective way to begin.

Patient-Centeredness must be a priority, ensuring that patients understand the risks of hypertension, the importance of medication adherence, and the need for lifestyle changes such as diet and exercise. Hospitals can develop targeted education campaigns that include digital resources (webinars, apps, or text message reminders) and in-person training. Programs should be designed to be culturally appropriate, accessible, and easy to understand, with a focus on building trust and encouraging patients to be proactive in managing their health. Tailored interventions could include specific plans for at-risk populations, such as the elderly or patients with comorbidities like diabetes.

Instigate cultural shifts across the healthcare workforce. This includes providing **training for healthcare providers** on the principles of VBHC, emphasizing the importance of patient outcomes over service volume. Specialized training should also focus on **shared decision-making** techniques, which ensure that patients are partners in their care. Regular workshops, e-learning modules, and collaborative care model training should be organized. For instance, hospital teams such as **multidisciplinary hypertension management teams**, which consist of general practitioners, cardiologists, nurses, and dietitians, should be trained to work in unison to monitor blood pressure control comprehensively. Senior leadership must not only endorse these changes but actively champion VBHC principles by visibly supporting the effort.

Establishing a clear understanding of **Time-Driven Activity-Based Costing (TDABC)** for blood pressure management will help evaluate the resource use in managing hypertensive patients. Hospitals can track costs at various points in the care continuum – consultations, diagnostic tests, and follow-up appointments – and use this data to identify inefficiencies. The analysis might reveal that the use of certain medications or procedures is driving up costs unnecessarily. Understanding these costs allows healthcare organizations to tailor reimbursement strategies, ensuring they are aligned with outcomes rather than the volume of services delivered. TDABC will guide hospitals in making informed decisions whether to integrate telehealth solutions for routine blood pressure check-ups, which will lower costs while improving access.

Phase III: Execution Phase

A clear, well-structured **communication** strategy is crucial in the execution of VBHC for blood pressure management. This strategy must not only involve healthcare providers but also engage patients by offering transparent, continuous feedback. Leadership should ensure that the rationale behind the shift to VBHC is consistently communicated throughout the organization: Appointing a **VBHC project manager** or **champion**, responsible for overseeing and coordinating the implementation across departments. **Nurse coordinators** could also serve as key figures in this effort, managing communication between the clinical teams, keep the nurse motivation high and ensuring that patients follow up on their blood pressure treatment plans.

Coordination across Care Providers: Blood pressure management requires seamless collaboration across various care providers. For instance, integrating **primary care physicians, cardiologists, endocrinologists, dietitians, and nurses** into a multidisciplinary team ensures that every aspect of the patient's care is optimized. Coordination can be facilitated by creating a **care pathway** for hypertension, which includes clear roles and responsibilities for each care provider at different stages of the patient’s treatment plan. Coordination should be supported by an

integrated digital platform that alerts clinicians if a patient's blood pressure reading is abnormal, enabling timely interventions.

To drive VBHC forward, **payment models** must be adjusted to incentivize outcomes over volume. Bundled payment models could be implemented for patients with hypertension, where a fixed amount is provided for all care associated with managing their condition over a specific period. This includes office visits, medications, diagnostic tests, and follow-up care. For instance, a **bundled payment** model could incentivize coordinated efforts across multiple care providers to ensure that a patient's blood pressure remains under control, reducing the need for expensive hospitalizations. Additionally, hospitals could receive financial rewards based on achieving predefined quality measures such as maintaining blood pressure control or reducing complications like stroke or heart attack.

Important: Before moving to the improvement phase, all hospitals should now go back to the preparation & design phase to make small adjustments in the key areas of infrastructure & technology, patient-centeredness, culture & education, and cost regulation & contracting.

Phase IV: Improvement Phase

Hospitals should regularly analyze and **identify gaps in outcomes** and determine where patients are not meeting blood pressure control targets. This could involve examining **racial or socioeconomic disparities** in treatment adherence or outcomes. A more targeted approach might focus on specific populations at high risk, such as those with comorbid diabetes or older patients who face unique challenges in blood pressure management. Hospitals can leverage predictive analytics tools to identify patients at risk for poor outcomes based on historical data and demographic information, allowing for early intervention.

Measuring meaningful **patient outcomes** for blood pressure management should focus on improving both clinical results (e.g., controlled blood pressure readings) and patient-centered

metrics (e.g., quality of life). Hospitals can utilize standardized tools such as the **ICHOM hypertension set**, which includes outcome measures like **cardiovascular events, stroke, and patient-reported quality of life,** with the possibility of adding certain outcome measurements adapted to individual local realities. Tracking these outcomes allows for ongoing assessment and comparison to best practices. Follow-up surveys or interviews with patients will help assess their satisfaction with the management of their condition, offering insights for improvement.

Continuous improvement should be embedded into the hospital's operational routine. Improvement teams, such as **quality improvement teams** consisting of physicians, nurses, data analysts, and patient educators, should meet regularly to review performance metrics, identify shortcomings, and implement adjustments. For example, if a certain demographic group shows poor blood pressure control, targeted interventions like community outreach programs or tailored educational materials can be introduced.

Ongoing **patient education** is essential in the improvement phase. Programs should be continuously adapted based on feedback and outcomes. For example, **interactive mobile apps** can track patients' blood pressure readings at home and provide tailored educational content on diet, exercise, and stress management. Patients should also have access to **personalized care plans**, which are reviewed and updated regularly by healthcare providers, ensuring that treatment strategies evolve as patients' conditions change. Additionally, **peer support groups** or online communities could be leveraged to provide patients with encouragement and shared experiences, fostering a sense of accountability.

Important: Before moving to the rollout phase, all hospitals should again start with the preparation & design phase to make small adjustments in the key areas of infrastructure & technology, patient-centeredness, culture & education, and cost regulation & contracting.

Phase V: Rollout Phase

The **scaling process** for VBHC in blood pressure management involves extending successful interventions and care models to other departments or healthcare settings. Hospitals can begin by expanding pilot programs that demonstrated positive results in targeted populations. For instance, a telehealth program for monitoring blood pressure in rural areas could be extended to other locations with similar demographic characteristics. Standardizing processes for monitoring blood pressure and improving patient outcomes across multiple care teams ensures consistency in the delivery of care, ultimately leading to better overall results.

AI can be integrated to analyze the large volumes of data collected through blood pressure monitoring. This can help identify patterns, such as patients at risk for developing hypertension, as well as disparities in care delivery. AI can also assist in creating predictive models for patients who are more likely to experience complications like stroke or heart disease, allowing for early interventions. By utilizing AI to highlight **at-risk populations**, hospitals can better allocate resources, improving both patient outcomes and resource efficiency.

An **iterative process** is indispensable for the **sustainable adoption** of VBHC practices. Regular evaluations ensure that the core principles of VBHC are maintained while continuous improvements are integrated into daily practices. Embedding VBHC into hospital policies and guidelines, supported by ongoing training and leadership, guarantees long-term adherence. As a result, the value-based approach to blood pressure management leads to improved patient outcomes, better cost-efficiency, and a sustained focus on prevention, ultimately optimizing chronic disease care over time.

4.3. Barriers of Implementation

The transition from the current health care model to value-based health care represents a significant challenge, as it necessitates the formation of new collaborative partnerships between health care providers and patients. Furthermore, it requires a fundamental shift away from an

organization characterized by medical specialization towards one centered on multidisciplinary care pathways tailored to specific patient cohorts. This transformation represents a multifaceted socio-technical intervention, necessitating organizational preparedness for change among health care professionals, including a cultural shift (Weiner, 2009). As Dr. Lee, the associate editor of the Journal and network president for Partners Health- care System, Boston stated: "*No one should expect the value framework to be easy to implement. The measurement of outcomes and costs, the organization of clinicians into teams focused on improving care for patient populations (...) are all formidable tasks*" (Lee, 2010).

Given the inherent complexity of VBHC, numerous initiatives commence by adopting a single aspect that is perceived as most feasible at the time. In reality, eazzch hospital employs a distinct approach and preference for operationalizing VBHC principles, guided by what is feasible within the hospital's context and the broader health care system (Krebs et al., 2023). Further, 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. It is possible that bias may arise during interviews due to preconceived notions or preferences of the interviewers, which could potentially skew the interpretation and analysis of the data. The adequacy and adaptability of information technology infrastructure are of paramount concern, as the successful implementation of VBHC hinges on efficient data collection, management, and analysis. It is therefore essential to invest in robust IT infrastructure in order to enable the seamless integration of data from various sources and to facilitate real-time monitoring and evaluation of health care outcomes within a VBHC framework. Policy changes are of paramount importance for facilitating the transition to VBHC. In order to achieve this, it is necessary to secure governmental support and to implement regulatory adjustments that will incentivize the delivery of value-based care and the reimbursement of its models.

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.

6. References

Bååthe, F., & Erik Norbäck, L. (2013). Engaging physicians in organisational improvement work. Journal of Health Organization and Management, 27(4), 479–497. https://doi.org/10.1108/JHOM-02-2012-0043

Bohmer, R. M. J. (2011). The Four Habits of High-Value Health Care Organizations. New England Journal of Medicine, 365(22), 2045–2047. https://doi.org/10.1056/NEJMp1111087

Britten, N. (2011). Qualitative research on health communication: What can it contribute? Patient Education and Counseling, 82(3), 384–388. https://doi.org/10.1016/j.pec.2010.12.021

Burns, D. J. P., Arora, J., Okunade, O., Beltrame, J. F., Bernardez-Pereira, S., Crespo-Leiro, M. G., Filippatos, G. S., Hardman, S., Hoes, A. W., Hutchison, S., Jessup, M., Kinsella, T., Knapton, M., Lam, C. S. P., Masoudi, F. A., McIntyre, H., Mindham, R., Morgan, L., Otterspoor, L., … McDonagh, T. A. (2020). International Consortium for Health Outcomes Measurement (ICHOM): Standardized Patient-Centered Outcomes Measurement Set for Heart Failure Patients. JACC: Heart Failure, 8(3), 212–222. https://doi.org/10.1016/j.jchf.2019.09.007

CDC. (2024). Health and Economic Benefits of High Blood Pressure Interventions. National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). https://www.cdc.gov/nccdphp/priorities/high-blood-pressure.html

Cohen, J. P. (2020). Is There a Future for Value-Based Contracting? Value in Health, 23(4), 416–417. https://doi.org/10.1016/j.jval.2020.01.006

Conrad, D. A. (2015). The Theory of Value-Based Payment Incentives and Their Application to Health Care. Health Services Research, 50(S2), 2057–2089. https://doi.org/10.1111/1475-6773.12408

Cossio-Gil, Y., Omara, M., Watson, C., Casey, J., Chakhunashvili, A., Gutiérrez-San Miguel, M., Kahlem, P., Keuchkerian, S., Kirchberger, V., Luce-Garnier, V., Michiels, D., Moro, M., Philipp-Jaschek, B., Sancini, S., Hazelzet, J., & Stamm, T. (2022). The Roadmap for Implementing Value-Based Healthcare in European University Hospitals—Consensus Report and Recommendations. Value in Health, 25(7), 1148–1156. https://doi.org/10.1016/j.jval.2021.11.1355

Cronin, M. A., Bezrukova, K., Weingart, L. R., & Tinsley, C. H. (2011). Subgroups within a team: The role of cognitive and affective integration. Journal of Organizational

Behavior, 32(6), 831–849. https://doi.org/10.1002/job.707

Dacheva, A., Vutova, Y., Mekov, E., Malinova-Encheva, M., Guldemond, N., & Djambazov, S. (2022). Implementation of the Value-Based Healthcare (VBHC) Concept with a Focus on Outcome Measurement. Journal of Health and Environmental Research. https://doi.org/10.11648/j.jher.20220803.11

Daniels, K., Rouppe Van Der Voort, M. B. V., Biesma, D. H., & Van Der Nat, P. B. (2022). Five years' experience with value-based quality improvement teams: The key factors to a successful implementation in hospital care. BMC Health Services Research, 22(1), 1271. https://doi.org/10.1186/s12913-022-08563-5

Duncan, I. (2022). Value-Based Contracting in Health Care. In A. Isabel Tavares (Ed.), Health Insurance. IntechOpen. https://doi.org/10.5772/intechopen.103021

Faems, D., Van Looy, B., & Debackere, K. (2005). Interorganizational Collaboration and Innovation: Toward a Portfolio Approach *. Journal of Product Innovation Management, 22(3), 238–250. https://doi.org/10.1111/j.0737-6782.2005.00120.x

Faltermaier, T. (1997). Why public health research needs qualitative approaches. Subjects and methods in change. The European Journal of Public Health, 7(4), 357–363. https://doi.org/10.1093/eurpub/7.4.357

Fernández-Salido, M., Alhambra-Borrás, T., Casanova, G., & Garcés-Ferrer, J. (2024). Value-Based Healthcare Delivery: A Scoping Review. International Journal of Environmental Research and Public Health, 21(2), 134. https://doi.org/10.3390/ijerph21020134

Gerber, A. (2022). Value Based Healthcare in Deutschland—Ein neues Paradigma für das Gesundheitswesen. The Health Circle. https://veranstaltungen.handelsblatt.com/health-circle/wp-content/uploads/2022/05/2022-03-31_Health_Circle_Value_Based_Healthcare.pdf

Hagedoorn, J., & Duysters, G. (2002). Learning in Dynamic Inter-Firm Networks: The Efficacy of Multiple Contacts. Organization Studies, 23(4), 525–548. https://doi.org/10.1177/0170840602234002

Hajro, A., Gibson, C. B., & Pudelko, M. (2017). Knowledge Exchange Processes in Multicultural Teams: Linking Organizational Diversity Climates to Teams' Effectiveness. Academy of Management Journal, 60(1), 345–372. https://doi.org/10.5465/amj.2014.0442

Hänel, P., Kein, K., & Herrmann, M. (2013). Bonuszahlungen in Krankenhäusern: Lern- statt Leistungsziele definieren.

Hinds, P., Liu, L., & Lyon, J. (2011). Putting the Global in Global Work: An Intercultural Lens on the Practice of Cross-National Collaboration. Academy of Management Annals, 5(1),

135–188. https://doi.org/10.5465/19416520.2011.586108

Kaplan, R. S., & Porter, M. E. (2011). How to Solve The Cost Crisis In Health Care.

Kostova, T., Roth, K., & Dacin, M. T. (2008). Institutional Theory in the Study of Multinational Corporations: A Critique and New Directions. Academy of Management Review, 33(4), 994–1006. https://doi.org/10.5465/amr.2008.34422026

Lee, T. (2010). Putting the Value Framework to Work. 363(26), 2483. https://doi.org/10.1056/NEJMp1013111

Lillo, F. G., □ M., García, B., & Lajara, B. M. (2017). Organisational ambidexterity: A literature review using bibliometric methods. International Journal of Bibliometrics in Business and Management, 1(1), 3. https://doi.org/10.1504/IJBBM.2017.082418

Lindgren, P., & Althin, R. (2021). Something borrowed, something new: Measuring hospital performance in the context of value based health care. The European Journal of Health Economics, 22(6), 851–854. https://doi.org/10.1007/s10198-020-01209-5

March, J. G. (1991). Exploration and Exploitation in Organizational Learning. Organization Science, 2(1), 71–87. https://doi.org/10.1287/orsc.2.1.71

McCombs, J., Myerson, R., Xu, Y., & Popovian, R. (2019). Value-Based Contracting in Healthcare:

Nilsson, K., Bååthe, F., Andersson, A. E., Wikström, E., & Sandoff, M. (2017). Experiences from implementing value-based healthcare at a Swedish University Hospital – a longitudinal interview study. BMC Health Services Research, 17(1), 169. https://doi.org/10.1186/s12913-017-2104-8

Nilsson, K., Bååthe, F., Erichsen Andersson, A., & Sandoff, M. (2017). Value-based healthcare as a trigger for improvement initiatives. Leadership in Health Services, 30(4), 364–377. https://doi.org/10.1108/LHS-09-2016-0045

O'Reilly, C. A., & Tushman, M. L. (2013). Organizational Ambidexterity: Past, Present, and Future. Academy of Management Perspectives, 27(4), 324–338. https://doi.org/10.5465/amp.2013.0025

Pinto, J. K., & Slevin, D. P. (1997). Critical Success Factors in Effective Project Implementation. In D. I. Cleland & W. R. King (Eds.), Project Management Handbook (1st ed., pp. 479–512). Wiley. https://doi.org/10.1002/9780470172353.ch20

Porter, M. E. (2005). Redefining Competition in Health Care.

Porter, M. E. (2010). What Is Value in Health Care? New England Journal of Medicine, 363(26), 2477–2481. https://doi.org/10.1056/NEJMp1011024

Porter, M. E., Larsson, S., & Lee, T. H. (2016). Standardizing Patient Outcomes Measurement.

New England Journal of Medicine, 374(6), 504–506. https://doi.org/10.1056/NEJMp1511701

Porter, M. E., & Lee, T. H. (2013). The Strategy That Will Fix Health Care.

Porter, M. E., & Teisberg, E. O. (2006). Redefining Competition in Health Care. Harvard business press.

Renting, N., Nutma, E., Roemeling, O., & Smailhodzic, E. (2022). Principles for the effective implementation of value-based healthcare: A scoping review and proposed process model for successful implementation. https://doi.org/10.21203/rs.3.rs-2131671/v1

Rider, E. A., Kurtz, S., Slade, D., Longmaid, H. E., Ho, M.-J., Pun, J. K., Eggins, S., & Branch, W. T. (2014). The International Charter for Human Values in Healthcare: An interprofessional global collaboration to enhance values and communication in healthcare. Patient Education and Counseling, 96(3), 273–280. https://doi.org/10.1016/j.pec.2014.06.017

Sandoff, M., & Nilsson, K. (2016). How staff experience teamwork challenges in a new organizational structure. Team Performance Management, 22(7/8), 415–427. https://doi.org/10.1108/TPM-05-2016-0021

Santos, W. J., Graham, I. D., Lalonde, M., Demery Varin, M., & Squires, J. E. (2022). The effectiveness of champions in implementing innovations in health care: A systematic review. Implementation Science Communications, 3(1), 80. https://doi.org/10.1186/s43058-022-00315-0

Scott, A., Liu, M., & Yong, J. (2018). Financial Incentives to Encourage Value-Based Health Care. Medical Care Research and Review, 75(1), 3–32. https://doi.org/10.1177/1077558716676594

Sivers, D. (Director). (2014). First Follower: Leadership Lessons from Dancing Guy [Video recording]. https://youtu.be/fW8amMCVAJQ?si=pqog7fdaCQrXaVyV

Smircich, L., & Stubbart, C. (1985). Strategic Management in an Enacted World. The Academy of Management Review, 10(4), 724. https://doi.org/10.2307/258041

Steinmann, G., Daniels, K., Mieris, F., Delnoij, D., Van De Bovenkamp, H., & Van Der Nat, P. (2022). Redesigning value-based hospital structures: A qualitative study on value-based health care in the Netherlands. BMC Health Services Research, 22(1), 1193. https://doi.org/10.1186/s12913-022-08564-4

Teisberg, E., Wallace, S., & O'Hara, S. (2020). Defining and Implementing Value-Based Health Care: A Strategic Framework. Academic Medicine, 95(5), 682–685. https://doi.org/10.1097/ACM.0000000000003122

Van Engen, V., Bonfrer, I., Ahaus, K., & Buljac-Samardzic, M. (2022). Value-Based Healthcare From the Perspective of the Healthcare Professional: A Systematic Literature Review. Frontiers in Public Health, 9, 800702. https://doi.org/10.3389/fpubh.2021.800702

Van Staalduinen, D. J., Van Den Bekerom, P., Groeneveld, S., Kidanemariam, M., Stiggelbout, A. M., & Van Den Akker-van Marle, M. E. (2022). The implementation of value-based healthcare: A scoping review. BMC Health Services Research, 22(1), 270. https://doi.org/10.1186/s12913-022-07489-2

Vlaar, P. W. L., Van Den Bosch, F. A. J., & Volberda, H. W. (2006). Coping with Problems of Understanding in Interorganizational Relationships: Using Formalization as a Means to Make Sense. Organization Studies, 27(11), 1617–1638. https://doi.org/10.1177/0170840606068338

Weiner, B. J. (2009). A theory of organizational readiness for change. Implementation Science, 4(1), 67. https://doi.org/10.1186/1748-5908-4-67

WHO. (2021). More than 700 million people with untreated hypertension. https://www.who.int/news/item/25-08-2021-more-than-700-million-people-with-untreated-hypertension

Widyaputri, D. (2022). Unravelling Value- Based Health Care. International Federation of Health Plans.

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 ?

Appendix 5: The Hammer Throw Field