Maastricht University

Unlocking value in healthcare

Citation for published version (APA):

Lopes Leao, D. L. (2025). *Unlocking value in healthcare: barriers and success factors in the introduction of value-based payment models in the Dutch healthcare system*. [Doctoral Thesis, Maastricht University]. Maastricht University. https://doi.org/10.26481/dis.20250514dl

Document status and date:
Published: 14/05/2025

DOI:
10.26481/dis.20250514dl

Document Version:
Publisher's PDF, also known as Version of record

Please check the document version of this publication:

• A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
• The final author version and the galley proof are versions of the publication after peer review.
• The final published version features the final layout of the paper including the volume, issue and page numbers.

Link to publication

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

• Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
• You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the “Taverne” license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy
If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

Download date: 17 May. 2025

Unlocking Value in Healthcare

Barriers and Success Factors in the Introduction of Value-based Payment Models in the Dutch Healthcare System

by
Diogo Luis Lopes Leao

Summary

Healthcare is facing several challenges, such as a rapid growth in expenditure and scarcity of healthcare professionals, which are expected to stay for the following years. These challenges hinder quality of care and accessibility. Therefore, long-lasting and sustainable strategies in the enhancement of efficiency in healthcare are necessary. In recent years, VBHC has emerged as an innovative way to address such challenges. VBHC, a concept developed by Michael Porter, prioritizes value delivered to patients rather than the quantity of services provided. A definition of *value* = *outcomes*/costs. To successfully implement VBHC, several elements need to be present: a proper patient condition organization; cost and outcome measurement; bundled payments; care integration; geographic expansion; and robust IT infrastructure for data collection and sharing. Bundled payments are one form of VBP models, but there are several other models that encourage quality over quantity and hence prioritize patient value, such as P4P and P4Q models. However, adopting VBHC may have potential unintended consequences, such as cherry-picking, leading to inequality in access to healthcare. This underscores the importance of the design and implementation process, as well as the applicability and monitoring of VBP models.

Several organizations around the world have recognized the value of VBHC. However, a wider implementation is still lacking, and the results of implemented initiatives have not always shown positive results. The Netherlands is one of the countries with the most extensive uptake of VBHC initiatives, with this healthcare delivery system already being included in national policies. Several projects have had positive results in both patient outcomes and experience, and several insurer companies have integrated at least some elements of VBHC in contracting. However, several issues have been reported, such as disparity in implementation efforts, uncertainty/ambiguity in definition, and misalignment between the way Dutch hospitals are structured and the required structure for a successful implementation of VBHC. Specifically, with the VBP models, issues have also emerged, such as regulatory obstacles, overly complex agreements and single-year agreements. These issues result in a lack or slower adoption of these models. Despite the several reported initiatives that are implemented in the Netherlands, most value-driven payment contracts falter during the design or implementation phase, with limited measurable impact on quality and costs for those that progressed.

This dissertation explores the barriers and success factors of VBP models influencing their design, implementation and application within the context of NOC and transmural care in the Netherlands. In doing so, this dissertation is expected to further aid the VBHC reform in the country. This dissertation identifies elements that enhance or inhibit the design, implementation, and application/evaluation of VBP models. It also analyzes the impact of different types of models on outcomes and reviews what facilitating and inhibiting factors are associated to each model type. These facilitating and inhibiting elements are also studied considering stakeholders' insights in a Dutch network. Furthermore, this dissertation explores the introduction of a VBP model monitoring method and shares the results of its application in the Netherlands. Lastly, this dissertation takes a step back from the VBP models and analyzes the complex elements that shape the contractual negotiations between hospitals and health insurers in the Netherlands, examining why VBHC, despite its advantages, has not received more attention in this negotiation process. Considering this central aim, the dissertation is divided in eight chapters.

<u>Chapter 1</u> provides a general introduction. It starts by describing the scope of the dissertation, followed by the explanation of several key concepts, namely VBHC and VBP models. This chapter then focuses on the Dutch context. It describes the Dutch healthcare system, as well as the Diagnosis Treatment Combination (DBC) reimbursement system. Still, in the same context, the state of VBHC in the Netherlands is explained, as well as a healthcare agreement that was signed, with great importance to the implementation of VBHC. The NHN and NHR are also covered in this section, as they are important elements in several of the subsequent chapters. This chapter also outlines the aim and research questions, and describes a framework designed to organize the elements that affect the design, implementation and applicability/evaluation of VBP models. Finally, the outline of the dissertation is also mentioned in this chapter.

<u>Chapter 2</u> is based on a systematic literature review conducted to identify the factors that facilitate or inhibit the design, implementation, and application of VBP models in the context of transmural care and NOC. PRISMA guidelines are used. Facilitating and inhibiting factors are divided into sub-categories according to the theoretical framework described in Chapter 1. The review includes 143 publications, each reporting multiple factors. Facilitators related to objectives and strategies, such as realistic/achievable targets, are reported in 56 studies. Barriers regarding dedicated time and resources, such as an excessive amount of time for improvements to manifest, are reported in 25 studies. Results suggest that a consensus within the network regarding objectives and strategies, trust, and good coordination are essential. Additionally, it is also concluded that healthcare staff needs to be kept motivated, well-informed and actively involved. Stakeholders should also manage expectations regarding when results are expected to be achieved.

<u>Chapter 3</u> consists of a systematic review of the literature on the impact of different types of VBP models on outcomes and on what facilitating and inhibiting factors are associated to each model type. This review is conducted in response to literature that shows that VBHC has the potential for cost control and quality improvement. With the associated VBP model being an essential element for implementing VBHC, and there being several types of models, this review

studies the evidence on the differences in the impact between models. Additionally, as the previous chapter includes a very comprehensive review of the elements affecting VBP models, Chapter 3 also reviews the facilitating and inhibiting factors, with the addition of associating these factors to a VBP model type. The same context of NOC and transmural care as in Chapter 2 is maintained. The same search strategy and articles that were included in the previous review are included in Chapter 3, with the addition of studies that, even though not showing elements affecting VBP models, showed the impact of those models. Results show that, among articles studying shared savings and P4P models, most outline positive effects on both clinical and cost outcomes, such as preventable hospitalizations and total expenditures, respectively. Most studies show no change in patient satisfaction and access to care when adopting VBP models. Providers' opinion towards the models is frequently negative. Transparency and communication among involved stakeholders are found to be key facilitating factors, transversal to all models. Additionally, a lack of trust is an inhibitor found in all VBP models, together with inadequate targets and insufficient incentives. In bundled payment and P4P models, complexity in the structure of the program and lack of experience in implementing required mechanisms are key inhibitors.

The overall positive effect on clinical and cost outcomes validates the success of VBP models. The mostly negative effects on organization-reported outcomes/experiences are corroborated by findings regarding providers' lack of awareness, trust, and engagement with the model. This may be justified by their exclusion from the design of the models, decreasing their sense of ownership and, therefore, motivation. Incentives, targets, benchmarks, and quality measures, if adequately designed, seem to be important facilitators, and if lacking or inadequate, are key inhibitors. These are prominent facilitators and inhibitors for P4P and shared savings models but not as prominent for bundled payments. The complexity of the scheme and lack of experience are prominent inhibitors in all VBP models, since all require changes in several areas, such as behavioral, process, and infrastructure.

Chapter 4 presents a study applying the Delphi method with the objective of reaching expert consensus on the most important facilitating and inhibiting factors in adopting VBP models. The systematic literature review included in Chapter 2 explores the facilitating and inhibiting factors in the context of transmural care and NOC. However, the review does not focus on identifying the importance of the facilitators and inhibitors reported. It only enables an overview of relevant factors, but not on what the most important factors are for the success in the adoption of VBP models. Data come from an expert panel of 15 members participated in a three-round Delphi study. Factors from experts and literature review of Chapter 2 were used to compile a list of 40 facilitators and 40 inhibitors. Afterwards, experts were asked to rate the importance of these factors using a 5-point Likert scale. Eight facilitating (e.g., transparency, communication, and trust among involved stakeholders) and seven inhibiting factors (e.g., lack of motivation and engagement among involved stakeholders) achieved full consensus. Timely availability of data and an integrated IT system for data registration (a facilitator) are the only factors achieving full consensus through a very high agreement. In conclusion, adequate outcome measures, targets, benchmarks, and incentives are important in VBP models. However, the less quantifiable items, such as strong leadership, transparency, communication

and trust, and motivation and engagement of the involved stakeholders, are also essential for successful adoption of these models and promote high-quality care at lower or equal costs.

In the second part of the dissertation, there is a focus on the Netherlands' healthcare system. Chapter 5 employs a mixed-method approach to study the introduction of a method to monitor the impact of VBP models. This chapter also shares the results of a first implementation of the model to evaluate the impact of the introduction of an outcome-based payment model in the Netherlands, for patients suffering from CAD. The approach showed in this chapter consists of online questionnaires and semi-structured interviews regarding the impact of the outcome-based payment model on treatment decisions, organization of care, and importance of clinical outcomes in the planning and control cycle of the hospital. In addition, case-mix analyses with real-world data are performed to monitor whether the risk profile of treated patients changed after the introduction of the payment model. Implicated cardiologists and cardiothoracic surgeons discuss the results. Evidence of Chapter 5 shows that the developed approach was implemented successfully. Data were collected and discussed at several time points and led to relevant insights regarding both intended and unintended effects. 52% of the respondents of the survey indicate that the VBP model leads to more attention to clinical outcomes within the medical department. Case-mix analyses do not exhibit any signs of risk selection. Results of Chapter 5 suggest that the developed mixed-method approach is a useful tool as it creates insights in the desired and undesired effects of the introduction of VBP models. The application of the developed model in other contexts can enrich the frame of reference and provide stakeholders more insight regarding which results are worrisome and which are not.

Chapter 6 investigates the experiences of stakeholders involved with the NHN and provides insights into the importance of facilitating and inhibiting factors on the functioning of the network. This chapter includes stakeholders who played a role in designing, implementing, or evaluating the network, or were involved in any other aspect. They were asked to fill in an online questionnaire and rate the importance of 16 factors for the functioning of the NHN on a 5-point Likert scale and were asked to suggest additional factors. These factors arose from Chapter 2 and Chapter 4. Data were analyzed using descriptive statistics and cluster analyses. Results from Chapter 6 show that adequate collaboration between GP groups and hospitals, medical specialists and/or physicians actively involved, and transparency, communication, and trust between stakeholders are mentioned as the most important factors. One cluster of respondents highly evaluated the network because of the independence of the funding from the central organization. Coordination, collaboration, transparency, communication, and trust are found to be essential for the success of the NHN's value-driven network, related to the human, less tangible side of the network. As these elements are frequently found in value-based structures with a payment component, it may serve as a confirmation that more complex infrastructures (with a payment element) are affected by the same factors as simpler ones, such as the NHN.

Chapter 7 goes beyond the element of VBP models, and targets VBHC. This chapter uses structured interviews with open- and close-ended questions to identify and analyze the complex elements that shape this negotiation and examine why VBHC, despite its reported advantages,

has not received more attention in the contractual negotiation process between health insurers and hospitals in the Netherlands. Chapter 7 explores current stakeholders ’perceptions of VBHC, identifies barriers to its attention, and proposes strategies to increase inclusion in negotiations. Respondents include executives from health insurers and hospitals, and experts on VBHC in the Netherlands. Chapter 7 finds that, during negotiations, hospital and insurer executives primarily focus on reaching a compromise, address issues of cost containment, volume management, and care availability. Despite recognizing the potential of VBHC to enhance patient outcomes and experiences, reluctance to implement VBHC persists due to uncertainties about cost-savings, its complexity, the lack of data, and because of competing priorities. Hospital executives stress the importance of initiating VBHC, advocating experiments, trust-building, and continuous evaluation, with strategies to standardize measures, enhance IT infrastructure, promote data transparency, foster collaboration, and educate stakeholders. Participants also underline the need for systemic change and governmental backing beyond negotiations.

Findings in Chapter 7 show that negotiations between hospital and insurer executives in the Netherlands predominantly prioritize cost containment and volume management, reflecting a systemic emphasis on immediate financial concerns over long-term value creation. There is hesitancy in transitioning to VBHC due to the administrative burden, and organizational process barriers, underscoring the need for collaborative strategies and systemic shifts to prioritize patient-centric care. Additionally, external factors such as FFS payment systems and societal expectations further complicate VBHC adoption, requiring governmental intervention, education, and cultural transformation efforts to align incentives and promote sustainable healthcare practices.

Chapter 8 provides a general discussion of the main findings of the previous chapters. It presents a concise overview of the achieved results in each chapter, interprets these results within the broader supporting and opposing literature to provide an in-depth analysis of different viewpoints, and highlights the research and policy implications at different levels and for multiple stakeholders. The discussion in Chapter 8 relies on the results of the systematic review in Chapter 2, and the results of the Delphi study in Chapter 4 to argue the existence of complex elements which influence the design, implementation and application of VBP models in a NOC and transmural care context. These elements are also discussed considering the results of Chapter 6, which are included in the context of the NHN. Insights from Chapter 6 are also leveraged to argue that not all elements included in Porter’s model are required to be applied to have success in transitioning towards a VBHC system. Based on results from both Chapters, which systematically review existing literature, Chapter 8 discusses risk selection as an important unintended consequence of introducing VBP models, which reduces their efficiency. Several mitigating strategies are also discussed, including monitoring, which is studied in Chapter 5. Results from both systematic reviews, in addition to the results from the Delphi study, trigger discussion in Chapter 8 about the importance of management skills to the success of VBP models. Insights from Chapter 6 are also used in this discussion, where stakeholders from the NHN are involved, as well as insights from Chapter 7, regarding the inclusion of VBHC in contractual negotiations. The results from the same chapters used to

discuss the importance of management skills are also used to discuss the importance of trust for a well-functioning VBP model. At the end of Chapter 8, the overall strengths, limitations, and general conclusion of the dissertation are thoroughly discussed to provide an overall summary of the core achievements of the conducted analyses and the faced constraints that can catalyze further studies in the field.

In conclusion, this dissertation investigates one of Porter's key elements to transition to VBHC, the VBP models. It provides a comprehensive understanding of elements that facilitate and others that inhibit the design, implementation and application of these models. Differences in the impact of different VBP models, and the factors associated with each model, are also explored. These factors are also studied considering a Dutch network. This dissertation also investigates a method to monitor VBP models and applies it to a model in the Netherlands. Still with a Dutch context, this dissertation explores the complex elements that shape the negotiations between insurers and hospitals and examines why VBHC has not received more attention in those contractual negotiations. Although part of the evidence in the dissertation is generated from the Netherlands, the practice, research, and policy implications of this dissertation are highly relevant to other countries, especially the ones with a similar, multi-payer system, in which healthcare coverage is offered by multiple competing insurance companies. Additionally, decision-makers may also consider the success of VBHC implementation without the need to include a payment system, which is an element initially thought to be indispensable by Porter to transition towards a successful VBHC system.