

# Health outcomes measurement for value-based healthcare

Citation for published version (APA):

Abdalla, R. (2024). *Health outcomes measurement for value-based healthcare: evidence from Saudi Arabia*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20240416ra>

## Document status and date:

Published: 01/01/2024

## DOI:

[10.26481/dis.20240416ra](https://doi.org/10.26481/dis.20240416ra)

## 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](http://www.umlib.nl/taverne-license)

## Take down policy

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

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.

## IMPACT STATEMENT

Outcome measurement is a cornerstone of Value-based healthcare (VBHC) initiatives, guiding healthcare organizations towards improving patient health outcomes and optimizing the quality and efficiency of healthcare services. It serves as a catalyst for the transformation from volume-driven to value and patient-centered health systems. Accordingly, understanding outcome measurement is essential to facilitate successful transformation to VBHC. This dissertation provides comprehensive evidence on outcome measurement for VBHC, measurement procedures, implementation approaches, associations between the outcomes, barriers to outcome measurement, and recommendations for improvement. This dissertation broadens the understating of patients, families, and the overall society about the benefits that VBHC could bring to their lives and health outcomes. In addition, different stakeholders, such as healthcare providers, hospital administrators, policymakers, payers, and researchers, would find this dissertation beneficial to guide their transformation efforts into VBHC reforms. Although the evidence in this dissertation was generated from Saudi Arabia, it is relevant to other countries and similar health systems and could contribute to designing their VBHC implementation models.

### **Contribution relevant to patients and society**

This dissertation highlights the significant alignment between VBHC and patient-centered care, where patients are at the center of the healthcare delivery system. The evidence presented in this dissertation empowers patients to participate actively with the healthcare team and to provide data on their health outcomes and experiences with the healthcare services. Patients need to know that they are the only and most reliable source of information for two major types of outcomes used in VBHC, including PROMs and PREMs, in addition to some clinical outcomes. The transformation to VBHC would be incomplete without patients' input in these outcomes that reflect their needs, preferences, values, and responses to treatments. Additionally, patients can benefit from the aggregate data on health outcomes to select treatment options and can use their individualized data to monitor the progress of their health status and the effectiveness of medical interventions on their health conditions. In other words, measuring outcomes and experiences enables patients to make informed decisions that would improve their health outcomes and quality of life. Moreover, this dissertation advocates for patients' involvement in planning and designing outcome measurements for VBHC. They can give feedback about the tools and procedures that are used for data collection and propose recommendations for improvement. These contributions from the patients could enhance their health literacy about their healthcare conditions and about the overall transformation in the healthcare landscape towards more value and patient-centered healthcare delivery systems.

In addition, this dissertation emphasized the core principle of VBHC that is improving health outcomes while using resources efficiently. In VBHC context, the patients are reassured that they receive better outcomes at lower costs. Taking this to a larger scale, the healthcare expenditure will be less at the societal level. As VBHC supports measuring health outcomes over the entire care cycle, as discussed in this dissertation, health promotion and disease prevention could reduce the incidence and the progression of diseases, which, in turn, would enhance the overall health of the population and reduce spending in the health system. Additionally, this dissertation encourages transparency and benchmarking of health outcomes, which enhances public awareness and knowledge of the effectiveness of healthcare services at different organizations. This could stimulate competition across healthcare organizations to enhance the value of services provided and to promote better patient outcomes.

### **Contribution relevant to healthcare providers and hospital administrators**

As described in this dissertation, measuring outcomes can guide healthcare providers in evaluating the effectiveness of their medical intervention and selecting interventions that lead to better patient outcomes while optimizing resource utilization. Accordingly, clinicians would make informed decisions that are based on real-time data from different types of outcomes. In addition, measuring outcomes captures areas that need improvement in the practice, which, in turn, triggers quality and performance improvement initiatives and collaboration across the healthcare organization. These improvement initiatives encourage healthcare providers to shift their priorities from increasing the volume to increasing the value of healthcare services in line with VBHC. This dissertation also supports standardization of outcome measurement to ensure comprehensive and consistent evaluation of the value of healthcare services. This could help healthcare providers benchmark their practice with better performers and accordingly elevate the standards of care.

At a higher level, this dissertation provides hospital administrators with tools to assess hospital performance, the effectiveness of the healthcare delivery system, and the overall patient outcomes and experiences in the hospital. This could guide them to efficient resource allocation to departments or services in most need of support in terms of staff, supplies, equipment, training, or financial support, which enhances the financial stability of the organization. From another angle, based on evaluating and benchmarking health outcomes, hospital administrators can hold clinicians accountable for achieving the desired targets and improving the quality of healthcare services. In addition, outcome measurement presented in this dissertation enables hospital administrators to make data-driven decisions to manage their hospital operations and contracts with clinicians, payers, and suppliers in congruence with the hospital's commitment to deliver value-based services.

**Contribution relevant to regulators and policymakers**

This dissertation has discussed different approaches to implementing outcome measurement for VBHC. Health regulators would find the evidence provided in this dissertation beneficial to guide the selection of the models that fit the unique attributes of their countries and health systems. Also, this dissertation emphasized the importance of learning from the successes and mistakes of different VBHC designs. Health regulators could evaluate diverse case studies from other countries that showcase the implementation pathways and roadmaps of VBHC and replicate or adapt the models that best suit their contexts and ensure better scalability and sustainability. In the selected models, health regulators need to align outcome measures with the financial rewards and reimbursement. This could encourage healthcare providers and organizations to improve health outcomes and reduce the cost of healthcare services.

This dissertation provides several strategies for policymakers to overcome barriers to outcome measurement. Policies should focus on integrating outcome measurement into the daily practice of healthcare providers and administrators, encouraging them to collect and use this data to inform their administrative and clinical decisions. In addition, this dissertation provides evidence for policymakers on the importance of national and international collaboration and harmonization of efforts to standardize the measurement of health outcomes. Policies should address comparisons and benchmarking across providers and organizations. Moreover, this dissertation advocates for patient-centered care and shared decision-making between patients and clinicians related to their care and treatment options. Policymakers should tailor policies to address this approach and emphasize the active participation of patients in medical care.

**Contribution relevant to payers (government agencies and insurers)**

This dissertation informs payers about the types of outcomes that are used in VBHC programs. Accordingly, insurers can align their reimbursement models with these outcomes and incentivize providers to achieve positive patient outcomes and improve the value and quality of healthcare services. In addition, based on assessing the aggregate health outcomes data, payers can objectively evaluate the overall performance of hospitals and accordingly make informed decisions on contracting and partnership opportunities with these hospitals. This, in turn, could encourage hospitals to maximize the value of healthcare services by improving health outcomes at the lowest cost. Providing quality services at lower costs would lead to mutual cost control for patients, hospitals, and payers simultaneously. Moreover, this dissertation supports outcome measurement per medical condition, which informs payers about the desired outcomes specific to each disease, and accordingly, they can estimate the costs and conduct cost-effectiveness analyses for medical treatments and interventions.

**Contribution relevant to IT vendors**

This dissertation underscores the importance of IT vendors in developing solutions that align with the measurement, tracking, and reporting needs for VBHC reforms. As highlighted in this dissertation, IT vendors could focus on developing software that facilitates real-time data collection and reporting to enhance the integration of outcome data in clinical practice and in routine patient care. Furthermore, as the implementation of VBHC requires data collection from multiple sources, IT vendors should optimize the interoperability features of their solutions to enhance seamless interfacing with other IT systems used in healthcare organizations, including the financial systems that are used for billing and reimbursement. In terms of data analysis and reporting, IT vendors could provide innovative modules to facilitate better visualization, interpretation, trending, and benchmarking of outcome data. Additionally, this dissertation supports mobile applications and patient platforms that facilitate the collection of PROMs and PREMs data.

**Contribution relevant to research**

This dissertation discussed important aspects of outcome measurement for VBHC and acknowledged that due to the multifaceted nature of VBHC, further investigations by scholars are needed to enrich our understanding of this transformative approach to healthcare delivery. This dissertation recommends further research to pilot the outcome sets and the VBHC implementation models to ensure their validity and applicability in clinical practice. Furthermore, research could focus on longitudinal studies that track patients and monitor their health outcomes over time in response to improvement initiatives. As highlighted in this dissertation, research that gains insights from patients and healthcare providers on the barriers to outcome measurement and the recommendations for improvement could streamline the implementation of VBHC in hospitals. In addition, national and international benchmarking and comparative analyses could highlight the areas that need further improvement in the design or the implementation of VBHC initiatives.

As VBHC continues to evolve in Saudi Arabia and in other countries, future research can be conducted to link cost measures to health outcomes used in VBHC initiatives. Also, research can evaluate the impact of VBHC in clinical practice as more healthcare organizations adopt VBHC approaches over time. In addition, research that assesses the association between the different types of outcomes, including clinical outcomes, PROMs, and PREMs, is important to guide improvement efforts toward projects that lead to positive results in multiple outcomes. This could maximize the value of healthcare services. In summary, this dissertation invites further in-depth investigations into different aspects of VBHC to unlock its full potential to improve the quality of healthcare services and enhance the sustainability of health systems worldwide.