

## Mapping Outcomes in Value-Based Healthcare: Systematic Review and Analysis



The healthcare system historically lacked integration between general business management practices and patient requirements. Value-Based Healthcare (VBHC) emerged as an innovative approach to healthcare management, focusing on patient-centred care. This model emphasises measuring outcomes and costs for each patient to move towards a high-value healthcare delivery system. However, while many healthcare organisations are adopting components of VBHC, there is a lack of rigorous scientific reports on the outcomes of these approaches. VBHC suggests managing the health system based on outcomes that matter to patients, but current practices often rely on generalised outcomes like overall hospital mortality and infection rates. To bridge this gap, an outcome hierarchy to define success for medical conditions is categorised into three tiers: health status achieved, the process of recovery, and sustainability of health. While healthcare providers have numerous metrics to measure outcomes, standardized and tested measures are needed for validity and comparison across providers. However, implementing outcome measurement in VBHC initiatives is complex and requires strategic engagement, data collection, and technological advances. The feasibility of following the six steps towards a high-value healthcare delivery system outlined by Porter and Lee remains a question. These steps include organising integrated practice units, measuring costs and outcomes for every patient, adopting bundled payment for care cycles, integrating care delivery across facilities, expanding services geographically, and enabling suitable information technology platforms.

### Scope and methodology

[A systematic review published in the Journal of Health Management](#) aimed to identify which outcomes are considered in studies of the value agenda, applying them to an outcome measures hierarchy and analysing the origin of data used in reporting outcomes of value-based initiatives. Starting with a subset of medical conditions, an in-depth analysis of value-based initiatives can expand over time as infrastructure and experience grow. The literature search yielded 7,195 records, of which 105 full-text articles were assessed, and 47 met the inclusion criteria. Most studies were conducted in the United States (39), with a focus on surgical inpatient conditions (34). Ten studies assessed in-hospital medical patients, while three involved both medical and surgical patient cohorts. Fifteen articles explored system settings, such as multicenter or national studies, while 32 considered applications at local hospital settings. Value programmes in the studies predominantly centred on pathway redesign (21) and traditional VBHC studies (20). Only six studies utilised computational intelligence platforms to support value programmes.

### Analysis of Outcome Measures in VBHC Studies

In Tier 1, mortality was measured in 19 studies, predominantly using in-hospital death as the primary measure. Tier 2 focused on the degree of health or recovery, with discharge-related measures being the most common. Time to recovery and the disutility of care or treatment process were also assessed, often through measures like length of stay and short-term complications. Tier 3, sustainability of health, included measures such as 30-day readmissions and post-discharge complications. Financial outcomes were evaluated in 79% of the studies, with microcosting estimation and time-driven activity-based costing (TDABC) being less commonly used methods. Electronic health records were the primary data source in 85% of the studies. However, only 34% used Patient-Reported Outcome (PRO) surveys. Despite some studies covering multiple tiers of the outcome hierarchy, there was limited coverage overall. Cost savings were a significant focus, often resulting from reductions in readmissions and inpatient stays, though accurate cost measurements were lacking in some cases. Some studies reported neutral effects or inconsistent improvements, while others noted positive effects on PROs, hospital capacity, quality improvement through risk adjustments, and resource allocation.

### Imbalance in Outcome Measurement Levels and Financial Assessment

One significant finding was the imbalance in the selection of tier levels within value initiatives. Tier 3 outcomes, particularly long-term consequences, were less explored compared to Tier 1 and Tier 2 outcomes. Traditional clinical and process outcomes, such as length of stay and infection rates, remained the most frequently measured, indicating a focus on immediate and short-term outcomes rather than long-term impacts on patient health and well-being. The review also highlighted the infrequent use of microcosting methods for determining financial outcomes, with a majority of studies relying on less precise measures such as reimbursement data or institutional accounting systems. This suggests a need for more rigorous and standardised approaches to assessing the financial impact of healthcare interventions within the VBHC framework.

## Challenges and Opportunities for Advancing the Value Agenda

VBHC aims to enhance care quality while reducing waste, yet the review found that the increase in quality is predominantly measured through hospital and clinical outcomes, rather than incorporating patient perceptions. Additionally, financial results are often reported without highly precise accounting methods, indicating a gap in accurately quantifying the economic impact of value-based initiatives. Patient-Reported Outcome (PRO) measures play a significant role in the VBHC model, but their widespread and consistent use has proven ambiguous due to the complexity of measures and fluctuating reliability of patient assessments. The review identified a need for more studies evaluating long-term consequences and outcomes for new conditions, as well as the application of standardized outcome measures across various health conditions, as advocated by the International Consortium for Health Outcomes Measurement (ICHOM). Challenges in measuring outcomes in healthcare were attributed to the complexity of measures, the reliance on evidence-based processes over patient-driven results, and the lack of an integrated view of patient outcomes over the full cycle of care. Bridging the gap between patient-centred outcomes and financial measurements requires investment in information technology and a shift in management culture towards a value-based approach.

While VBHC initiatives have shown success in improving quality and patient outcomes, there is a need for more rigorous evaluation of financial outcomes and methodological consistency. Addressing these challenges will contribute to the reproducibility and effectiveness of the value agenda in healthcare delivery.

Source: [Journal of Healthcare Management](#)

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Published on : Tue, 30 Apr 2024