What Should Be the Best Output of Healthcare? Reflections Based on Value-Based Healthcare Theory

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Abstract. The traditional measure of a health care system success is based on the number of care provided, such as hospital visits, procedures, or tests. Although these are low-hanging fruits, they are actually deceptive because they reward activities without measuring whether they make people healthier. This leads to waste, inefficiency and intervention measures that provide little benefit to patients. Value-based health care (VBHC) is a more pragmatic model that defines output as the results that patients actual value relative to the costs. This article discusses the main ideas of VBHC and why it is a superior basis for evaluating health care. It pays special attention to two basic tools: the Patient-Reported Outcome Measure (PROM) to evaluate the patient's own experience, and payment innovation, such as bundled or outcome-based models, which link financial incentives with actual improvement. In order to understand how these ideas work in the real world, this article discusses examples from ophthalmology, in which outcome data and cost-effectiveness analysis guide the deployment of traditional care and new technologies. The study also considers the advantages of VBHC, including greater patient-centeredness and higher efficiency, and the disadvantages, including the lack of high-quality data to support and hardship to ensure the fairness among different patient groups. Finally, the study discusses the situation in China, where VBHC can help cope with growing demand with limited resources. Overall, this article argues that the actual output of health care is not the amount of services provided, but the real value added to the patient's life.

Keywords: Value-Based Healthcare; Patient-Reported Outcome Measures; Payment Reform; Cost-Effectiveness; China Healthcare Reform.

1. Introduction

Health care has always been quantified by the amount of care provided, not by whether that care actually makes people healthier. The hospital system usually quantifies activity based on admissions, diagnostic tests or procedures, assuming that the more work is done, the better the care. For decades, this quantitative-focused approach has dominated health policies because it is easy to measure, standardize, and compare institutions, but these measures do not tell us much about whether patients' health has truly improved.

Such kind of focus on quantity instead of quality may be deceptively dangerous. Patients do not go to the hospital for a CT scan or a knee replacement. They go to the hospital because they want to live longer, reduce pain, restore mobility, or remove limitations in daily activity. In other words, patients are looking for the result, not the procedure. When the output is calculated on the basis of service volume, it can encourage over-treatment of the health system instead of effective improvement. This problem has been illustrated in recent studies.

Through a scoping review in 2024, it was found that quantity-driven care would encourage inappropriate intervention, misappropriation of resources, and failure to improve population health [1]. Another report shows that 20 to 30 percent of total health care spending in developed countries is wasted on duplicate or low-value services, wasting billions of dollars a year and not meeting the needs of patients [2]. Such waste also brings opportunity costs, since the money spent on inefficient interventions can instead pay for preventive care, primary health care or enhanced equity planning. To rectify this misleading trend, policymakers and scholars have promoted value-based health care (VBHC). Instead of quantifying productivity as "more", VBHC defines health care output as patient-

centered outcomes relative to cost. This shift has changed the question from "How many services have been provided?" to "How much has the patient's health actually improved and at what cost?" [3].

Despite the popularity of VBHC, the health care system faces an overwhelming dichotomy. On the one hand, patients want the results they can feel: pain relief, recovery of mobility, emotional health, or autonomy. On the other hand, most health care organizations pay according to the service charging model, that is, they earn income as the number of services provided increases, neglecting the fact that there is no actual patient benefit. The result is a conflict of goals: clinicians may abuse surveys or interventions because they can generate income, even if the treatment has little impact on the results.

An effective solution is to introduce Patient-Reported Outcome Measures (PROMs). PROMs deliberately captures the patient's voice and requires them to report symptoms, dysfunction and quality of life in a timely manner. Compared with other clinical indicators (such as blood pressure or tumor size), PROMs reflect issues that are most important to the patient. In a study in 2024, PROMs was integrated into patient consultations, increasing the frequency and depth of discussion about patient outcomes, and repositioning the provider system in a patient-oriented manner [4].

PROMs can also produce system-level benefits. In the 2025 Social Return on Investment Analysis, it was found that due to the reduction of avoidable follow-up visits, and the promotion of shared decision-making and patient self-management, the PROM program showed a favorable cost to benefit ratio [5]. Therefore, PROMs produce clinical and economic benefits, which makes the system consistent with what patients are most concerned about.

The consequences of this paradox, coupled with the benefits of PROMs, have created the core research questions of this article: how value-based health care transforms the delivery of health care in favor of patient-centered outcomes, and how it affects system design, financing and global policies, especially in developing countries like China and its healthcare system?

This article answers the research questions in seven parts. The first part introduces the background, research problems and the values of value-based health care (VBHC). The second part outlines the VBHC theory and its application, paying special attention to PROMs and payment reform. The third part introduces a case study of ophthalmology to illustrate how outcomes and cost-effectiveness play a role in practice. The fourth section discusses the advantages and disadvantages of VBHC. The fifth part discusses how VBHC is promoted in developing countries, such as health care reform in China. The sixth part provides conclusions and implications, and the last section lists reference materials.

2. Value Based Healthcare: Theory and Applications

2.1. Conceptual Basics

The principle of value-based health care (VBHC) can be summarized as a simple formula:

$$\text{Value} = \text{health outcomes that matter to patients} / \text{cost of delivering those outcomes} \quad (1)$$

Formula (1) emphasizes that health care should not be judged by the number of services provided, but by the results obtained relative to the resources spent.

Unlike traditional systems, VBHC does not assume that more services will translate into the better care. On the contrary, it questions whether each service contributes to improving patient outcomes and whether the resources consumed are reasonable. In a review in 2022, it was observed that VBHC requires three major changes: (1) systematic outcome measurement, (2) repositioning organizations according to the patient's condition, and (3) payment mechanisms linked to outcomes [6].

This transformation not only requires better measurement, but also a cultural change. Clinicians must promote transparency in outcomes, organizations must integrate care across departments, and policymakers must align incentives with value rather than activities.

The difference between the two healthcare systems is summarized in Table 1.

Table 1. Comparing Outputs in Volume Based vs Value Based Healthcare

Dimension	Volume Based Healthcare Output	Value Based Healthcare Output
Core Metric	Number of procedures, visits, or admissions	Patient relevant outcomes (survival, functioning)
Measurement Focus	Process and service counts	Clinical outcomes and PROMs
Incentives	Fee for service, volume linked payments	Bundled or outcome linked payments
Care Delivery	Fragmented, specialty driven	Integrated care organized around patient conditions
Patient Impact	Overuse, inconsistent benefit	Measurable, meaningful health improvements

This table highlights why VBHC is gaining support: it ties performance to what patients actually experience, rather than to how many services providers deliver.

2.2. The Role of PROMs

Patient-Reported Outcome Measure (PROM) is a standardized questionnaire or survey that requires patients to report their health status, symptoms, and daily life functions..

PROM is the basis of VBHC, because it is an indicator of what happens to patients. They measure quality-of-life factors, such as fatigue, mobility, anxiety, and daily activities. Unlike laboratory tests, these cannot be measured by doctors alone, but require feedback from patients.

Evidence shows that PROM can be successfully implemented on a large scale. An experiment in a hospital in the Netherlands in 2024 showed that the inclusion of the PROM survey in electronic health records and staff training significantly increased the response rate and made data collection more reliable [7]. PROM also supports clinical decision-making and allows providers to monitor the progress of patients and refine care.

From a policy perspective, PROM guides capital decision-making. The government can finance high-value interventions by identifying those that have measurable patient-reported benefits. In the 2025 SROI analysis, PROM programs were shown to create economic and social value by benefiting patients, reducing unnecessary services, and enabling the health system to invest in value-creating interventions [5].

2.3. Payment Reform: Bundled and Outcome Based Models

VBHC also needs to reform monetary incentives. Through service fees, providers are paid for each service, thus encouraging a large number of services. In contrast, a bundled payment is a fee for the entire care cycle, for example, for all services related to hip replacement or cataract surgery.

A study by Delphi Consulting in 2025 determined that trust, open measurement, and leadership commitment are the main driving forces for the adoption of bundled payments [8]. They promote cooperation between disciplines and resist decentralized decision-making. But the problem still exists. A review in 2023 warned that unbundling payments without risk adjustment can discourage providers from choosing challenging or vulnerable patients and undermine the fairness of care..

Therefore, PROM and payment bundles together show the key mechanism of VBHC: tracking results from the patient's perspective, and structuring payment to encourage patient-centered outcomes.

3. Typical Case: Ophthalmology

Ophthalmology is the perfect case study for VBHC, because vision is a paradigmatic example of independence, quality of life, and productivity. Results such as acuity, complication rate, and functional status can be measured, and relevant cost-effectiveness research has been well established in this field. In addition, eye care field shows how VBHC evaluates emerging technologies, including traditional interventions (screening, surgery) and artificial intelligence.

3.1. Cost Effectiveness of Screening

Diabetic retinopathy (DR) is the main cause of blindness worldwide. The screening model based on the VBHC framework shows that effectiveness and results can be improved. A study in 2025 showed that optimizing DR screening intervals is more cost-effective than traditional practices by avoiding patient vision loss and reducing long-term treatment costs [9].

A further study in 2024 evaluated self-imaging optical coherence tomography and found that it can detect diabetic macular edema early, improve results, and reduce long-term costs [10]. Both examples show how VBHC links interventions with measurable value: patients are not blinded, and in the long run, the system can save money.

3.2. AI and Automated Screening

New technologies bring both opportunities and threats. In short, the economic assessment in 2024 found that artificial intelligence-assisted DR screening is cost-effective under real-world compliance levels and cost ceiling [11]. Similarly, the 2023 real-world assessment published in The Lancet eClinicalMedicine supports the use of automated screening to improve efficiency but maintain quality [12].

These findings illustrate the way VBHC leads technology adoption. By applying the cost-effective threshold, we can distinguish between innovations that provide real value and those that only increase costs without improving results.

4. Benefits and Limitations of VBHC

4.1. Benefits

There are several main advantages of VBHC. First of all, it improves the patient-centered focus, because PROM directly integrates the patient's voice into the result measurement. Researches show that PROM can improve doctor-patient communication, promote decision-making and improve satisfaction [4,5,7]. Secondly, VBHC improves the consistency of incentives. By using bundles and result based payments, it improves coordination, efficiency, minimizes complications and unreasonable care [8]. Lastly, VBHC improves efficiency and sustainability. Well-designed payment systems that link reimbursements to outcomes are cost-effective without compromising quality, and make the health care system financially viable [13].

4.2. Limitations and Restrictions

Although VBHC has many advantages, there are several restrictions that make it difficult to implement. One of the main obstacles is the resistance of the current health care system, which has not yet moved away from the fee-for-service scheme. If the payment shifts to a bundle or a result, hospitals will be alert to the loss of income, and doctors will be afraid of being held accountable for results beyond their control. A review in 2023 showed that VBHC adoption plans tend to fail without cultural change and effective leadership [13]. The second obstacle is infrastructure and data collection problem. The implementation of VBHC requires a powerful system to measure, store, and report outcome data, and the PROM response rate is variable. Back in 2024, a study showed that less than half of the prospective patients completed the PROM questionnaire while in hospitals, leaving a biased sample [7].

Without representative and good data, cross hospitals result comparisons are misleading. Risk adjustment and equity are also tricky. The complexity of patients varies greatly. By definition, hospitals with healthier and wealthier population will have higher scores than those that deal with vulnerable patients, unless appropriate adjustments are made. A review in 2023 warned that bundled payments without proper risk adjustment will encourage "cream skimming," which providers avoid high-risk patients to protect their performance indicators [13]. Moral and fairness issues bring more problems, because PROM must be strictly validated.

4.3. Economic Decision Making and ICERs

One of the important technical tools for economic decision-making in VBHC is the incremental cost-effectiveness ratio (ICER), which measures the cost per quality-adjusted life year (QALY) gained between two interventions. Figure 1 shows how ICER helps determine whether interventions provide sufficient value.

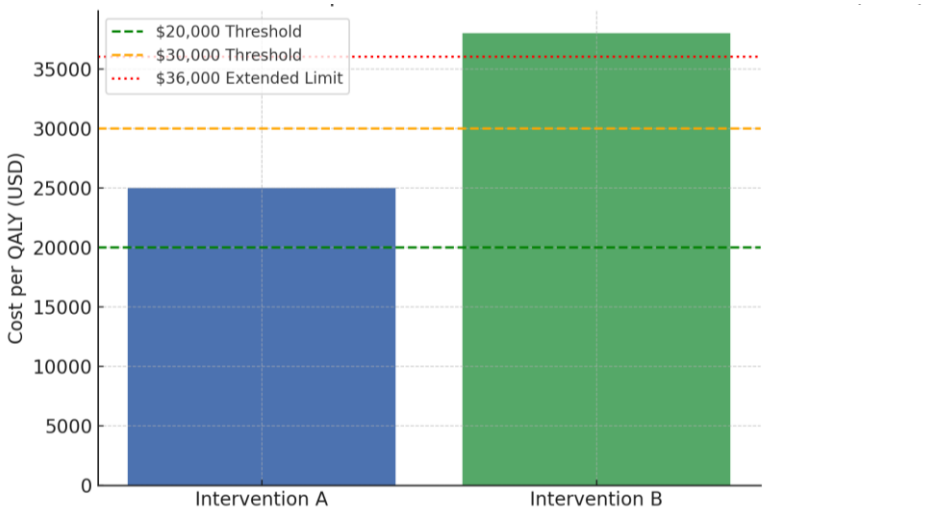

Fig. 1 ICERs of Two Interventions Compared with Cost-Effectiveness Thresholds (USD). Cost Effectiveness Thresholds in VBHC Decision Making (Source: This figure is adapted from N. Purohit (2025) and Hongkang Wu (2024) [9, 11])

Health cares can be ranked by cost-effectiveness, identifying interventions that provide measurable health benefits by applying ICER. From Figure 1, the cost-effectiveness threshold helps decision-makers choose treatments that deliver sufficient value for the resources they consume, and identify those that exceed the threshold and may therefore be unaffordable or unjustified. Such policies improve efficiency and equity, as available budgets are allocated for interventions of maximum value.

5. Promoting and Applying VBHC in Developing Countries: A Focus on China

In the face of fiscal tightness, emerging countries face the double burden of increasing demand. Traditional quantity-based systems may waste limited budget on unworthy services. In contrast, VBHC ensures that every RMB spent depends on the measurable benefits of the population's health. For countries with a growing population and an increasing burden of chronic diseases, VBHC provides a means of optimizing benefits from limited resources.

5.1. China's Healthcare Condition

China provides a useful example. Over the past two decades, the country has expanded health insurance coverage to nearly 95 percent of the population and has invested heavily in hospital infrastructure. However, system-wide inefficiency still persists. There is a big gap between urban and rural areas: although patients in Beijing and Shanghai can enter world-class hospitals, patients in rural provinces face limited facilities and a shortage of specialists. Long-term diseases such as diabetes and

hypertension are putting pressure on resources, and the growth rate of medical expenditures is higher than that of GDP [14].

The Chinese government expressed its intention to reform through its "Healthy China 2030" plan, emphasizing prevention, integration and fairness [15]. These goals are very consistent with the principles of VBHC, but there are some difficulties. The first is the payment reform. Hospitals in China still rely on service volume for financing, and the transition to bundled or result-based payments will require political will and regulatory support [16]. The second problem is data fragmentation. Although digital health records are widely used, they are separated by provincial and hospital systems, making it impossible to keep track of results nationwide [16]. The third problem is related to Health Technology Assessment (HTA). HTA is crucial in assessing cost-effectiveness and ICER thresholds, but its application in China is not yet widespread, so it is difficult to expand VBHC nationwide [16].

5.2. Opportunities and Strategies

Despite these kinds of challenges, China has its unique opportunities to adopt the VBHC model. A possible approach is to introduce pilot programs in high-burden diseases such as diabetes, where outcome measures and international cost-effectiveness evidence already exist [17]. Another area is the use of digital health and artificial intelligence.

China is a leading country in artificial intelligence innovation. In 2024, the evaluation of artificial intelligence-enhanced diabetic retinopathy screening found that under the VBHC standard, the cost-effectiveness estimate was favorable [11]. Using this type of technology to collect PROM data can support outcome-based care. The last consideration is the necessity of equity protection. To prevent worsening inequality, VBHC indicators should be defined to capture gender, income, and regional differences so that rural residents are not excluded from the benefits of reform.

6. Conclusion

This article examines what the actual "output" of health care should be and how value-based health care (VBHC) redefines this discussion. The model discussed compares the traditional volume-based system with VBHC, analyzes the role of patient-reported outcome measures (PROMs) and payment reform, presents a case study in ophthalmology, and evaluates the impact on developing countries such as China. The main finding is that health care needs to be defined not by the number of services provided, but by the value created for patients. VBHC provides a better basis by linking systematic incentives with outcomes that are important to patients rather than procedure volume. Case study evidence shows that methods such as PROM, bundled payment, and ICER-based analysis improve efficiency and fairness.

Therefore, the policy proposal involves strengthening PROM adoption, payment framework design for results rewarding, and fairness protection to ensure that vulnerable groups are not unfairly affected.

China's reform should aim at building a health technology assessment (HTA) capacity to align digital health with PROM and promote projects for high-burden diseases such as diabetes.

At the same time, this research also has some limitations. It is based on secondary data and case studies, which do not always represent the whole picture of the health system, especially in fast-changing countries like China. Future research should investigate the performance of the VBHC project in large-scale pilot programs in different provinces and patient groups, and whether the results-based model can be expanded nationwide without unintentional differences. Such research will provide more concrete evidence for how VBHC is applied from principle to practice in developed and developing health systems.

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