



# Pay less and spend more—the real value in healthcare procurement

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**Abstract:** Healthcare performances have been for long evaluated according to outcomes and costs. What still needs to be defined is which outcomes are the most relevant to the patient, and which costs any supplier is capable to reduce, or increase, to the funder. If technical efficiencies during healthcare production and delivery may continue to evolve, the opportunities for further savings are likely to decrease. Major improvement could be achieved from better definition of outcomes that really matters to patients and stakeholders, that is measuring the real value. Many purchasers are shifting from a traditional approach based on single-unit cost-saving to a more holistic approach, encompassing long-lasting performance evaluation, including the highest possible number of stakeholders and wider sets of indicators. Value-based procurement (VBP) has been defined as achieving “outcomes that matter to people at the lowest possible cost”. Although this approach may appear complicated in practice, it was already proven successful in different countries, medical and surgical applications, and has also been endorsed by some important international institutions. The scope of this review is to introduce VBP from a theoretical and an empirical level, referring to relevant practices and challenges which emerged in the current institutional, clinical and academic debate. VBP seems to be a promising solution to improve healthcare efficiency and fairness, provided a clear conception of what is value and a permanent collaboration between clinicians and scientists. When different dimensions of value (i.e., personal, technical, allocative and societal) are supported by well-designed study to identify the respective outcomes, it becomes easier to find better solutions in support of healthcare quality and sustainability.

**Keywords:** Outcomes; quality control; sustainability; value; value-based procurement (VBP)

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## Introduction

Healthcare performances have been for long assessed according to two basic paradigms, i.e., outcomes and costs, regardless of how the boundaries of their ratio are then defined (1,2). What still needs to be defined is which outcomes are the most relevant to the ultimate care recipient (the patient), and which costs any supplier is capable to reduce or increase, to the funder (3).

If one considers that costs are numerical entities which

many techniques can calculate quite easily (4-6), outcomes entails a heterogeneous set of indicators which may be challenging to define, identify, collect and elaborate. When healthcare providers compete for managing and treating patients, they may be tempted to prioritize short-term benefits such as single-units cost-savings (i.e., stents, prostheses, diagnostic exams), in order to minimize perioperative complications, improve early functional recovery, shorten hospitalisation or deliver high-sensitive but poorly specific diagnostic investigations. For instance,

they may be tempted to give priority to volume (i.e., the number of patients treated or performances delivered) rather than value (in general, the benefits generated by those performances to those patients): this is particularly true in the treatment of chronic diseases, where volume is rarely proportioned—if not sometimes opposite—to value (7). At the same time, public-financed welfare systems may find the key to sustainable healthcare by reducing the investments in post-acute care, replacing the economic and social burden of long-term care to the patient's family or to other institutions (8,9). In primary care, non-appropriate diagnostic investigations may contribute to generate limited clinical benefit and a subsequent misuse of individual or shared pocket (10). In surgery, long-term readmissions following predictable (and reasonably preventable) complications represent a risk for the patient and a substantial burden for public or private funders (11-14), in terms of wasted resources or market accountability.

Such a short view sight of healthcare tends not only to undermine patient safety, but also the longer-lasting benefits generated to the other stakeholders, be them providers (those who perform healthcare interventions), suppliers (those who supply them with devices and technologies), payers (those who finance providers and suppliers, according to the healthcare system in which they operate), and society (the community of people and institutions who take care of patients outside the hospital, or in public-financed systems, those who finance healthcare).

Shifting from a traditional approach to short-term savings to a more comprehensive approach (both in terms of indicators and stakeholders) (15,16) should therefore extend the benefits of healthcare to patients (lower costs and better outcomes), providers (higher patient-satisfaction rates and better care efficiencies), payers (stronger cost controls and reduced risks), suppliers (alignment of prices with patient outcomes) and society (reduced healthcare spending and better overall health).

This is the core idea of value-based healthcare, defined as “outcomes achieved per money spent” (17). In order to understand which outcomes are most relevant to different stakeholders, a dedicated report of the European Commission (EC) has decomposed value into several dimensions: value-based healthcare (VBHC) is a comprehensive concept built on four value-pillars: appropriate care to achieve patients' personal goals (personal value), achievement of best possible outcomes with available resources (technical value), equitable resource distribution across all patient groups (allocative value) and contribution

of healthcare to social participation and connectedness (societal value) (18).

### Value-based procurement (VBP): from theory to practice

Turning value into practice requires first of all to understand which performances and procedures are under evaluation. The purpose of this review is to introduce the concept of value in healthcare procurement, the process in which providers purchase medical technologies and devices in order to provide good quality healthcare at competitive or sustainable prices (19).

A good example of how VBP can turn from theory to practice is offered by comparing the theoretical recommendations and the empirical results offered by the following international studies. To quote the Lessons on “Value-Based Procurement of Innovative Medicine” released by The Conference Board of Canada (20).

- Value-based agreements evolve from a budget-based model focused on transactional value, to an outcome-based model focused on clinical, patient, health system and societal outcomes;
- Value-based agreements require that stakeholders are transparent about the expectations and possible benefits for all patient involved;
- The success of initiatives is influenced by selection of appropriate measures and metrics, and how well they are linked to the overall objectives of each program.

Although such process may appear challenging in practice, it was already proven successful in leading jurisdictions in Canada (21), and is currently being implemented in five pilot projects in the Netherlands (cataract surgery, breast cancer surgery, maternal and neonatal care, depression and anxiety, substance abuse) (22). According to the Dutch experience, the following principles define VBP in practice:

- (I) it is not the purchaser who specifies how the assignment should be fulfilled, but the provider, based on its personal experience;
- (II) the provider takes maximum responsibility for end result of assignment;
- (III) the purchaser does not set minimum product requirements throughout suppliers selection process;
- (IV) selection of providers encompasses mainly on objective and measurable evidence of past-performance, and not lower price or costs.

If national agencies from many countries have adopted such a broader approach for evaluating long-term efficacy

and effectiveness of drugs (23-26), VBP is also taking hold in the field of diagnostics, laboratory testing, medical and surgical devices (27,28). The benefits of VBP are also confirmed by the World Health Organization (WHO) guidelines on blood chain procurement, according to which “*although a product is often more expensive, its longer life span and low maintenance costs generally more than justify the investment*” (29).

Healthcare managers are increasingly appreciating the value of laboratory medicine in providing high quality data, high efficiency and reduced costs (30), thus improving and standardizing the quality of purchasing procedures among different services. However, for these approaches to be effective, it is fundamental (I) avoiding pricing on single technical performances (regardless of the benefits generated to the patients), (II) establishing which of those benefits are most relevant, in order to share clear goals between professionals (31-34). This happens, for example, when pathologists identify a certain degree of diagnostic accuracy as threshold for enabling payments to suppliers, a process needing strict cooperation with clinicians aimed at receiving feedback on the most valuable diagnostic investigations. The Complete Blood Count (CBC) is a paradigmatic example. This common laboratory test is cheap, rapid, accurate, available in most clinical laboratories using standardized automatic instrumentation (35), but its results have a high clinical impact, influencing a large number of diagnostic and therapeutic decisions. The procurement of a valuable instrumentation for performing the CBC should not only rely on the cheapest solution among the various options, but shall instead consider additional parameters such as the accuracy in different clinical settings, whereby the quality specifications for CBC may consistently vary in the general population or in patients with leukemias. Indeed, increasing funders are already paying a quote based on accuracy indicators and the high value of laboratory medicine had also been proven by a systematic literature review for a high range of diagnostic tests and techniques (36), genetic testing included (27).

VBP seems a feasible approach also for orthopaedic surgery, in terms of secondary prevention strategies of hip fracture (where assessment of bone health and metabolism is effective for decreasing the risk of morbidity and mortality after trauma) (37) and prosthesis supply for hip and knee arthroplasty, where the best prostheses were not the cheapest, but those providing the best clinical and economic benefits on the long term (38,39). Elective orthopaedic surgery represents a pragmatic example of the holistic

benefits achievable by a valuable medical intervention, for which the main goal is not saving patients from acute or life-threatening disease, but re-establishing a certain degree of autonomy from loss of function (and possibly improving quality of life on the long-term).

### Involving patients

According to recent international surveys and reports, healthcare decisions are more reliable, outcomes improve, and resources are more efficiently allocated when the patient is involved (40-42). For instance, international agencies such as the European Union (EU) Health Coalition and the Organisation for Economic Co-operation and Development (OECD) have both recommended to perform holistic evaluations of healthcare interventions considering, also the patient's perspective along with biomedical outcomes that have already been recorded by clinicians (41,42).

Patient-related Outcome Measures (PROMS) and Patient-related Experience Measures (PREMS) are indeed constantly increasing in literature (43,44), with promising results in research and clinical practice (40). PROMS are disease-specific tools aimed at ascertaining a patient's view of personal symptoms, functional status and health-related quality of life, whilst PREMS focus on more healthcare delivery features such as humanity, dignity, and more simply, the volume of waiting time experienced.

PROMS have been used in one study aimed at reinforcing national joint registries with information on patient-experience for total ankle arthroplasty implantation models, design, survivorship and risk factors, thus supporting decisions surgeons' and clinicians' decisions (45). In another study, PROMS have been collected and digitalized in an electronic registry, to foster the concept of minimal clinically important difference in spinal surgery, for estimating the actual effect perceived by patients after disc degenerative disease treatment (46). PREMS have been used, in turn, for assessing patient's perspective through a psychometrical test on service provision, both in routine (47) and emergency health care (48).

If VBP has been defined as “outcomes that matter to people at lowest possible costs” (49), the contribution of patient experience is a fundamental step to improve into healthcare delivery and sustainability.

### Conclusions

Great advances have been achieved in support of quality

and cost-effectiveness during the overall healthcare process, but inappropriate care and waste of resources still offer significant room for improvement. Despite VBHC is a current trend in the international debate, identifying those procedures, stakeholders and indicators which define real value is still a challenge. When turning from theory to practice, the concept of value varies according to the procedure under evaluation.

Several applications of VBP demonstrate how innovation not only involves drugs, surgeries and medical devices, but more frequently encompasses the strategies used for purchasing, charging, and delivering. VBP requires a permanent collaboration between society, clinicians and scientists: when different dimensions of value (personal, technical, allocative and societal) are supported by well-designed study to identify the respective outcomes, it is easier to find more efficient and sustainable solutions for healthcare deliverance.

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### Footnote

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