

Leading Health Care

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Value-based healthcare in theory and practice

WHAT HAVE WE LEARNED? LESSONS FROM THE SWEDISH
EXPERIENCE



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Foreword

In recent years, value-based health care (VBHC) has been launched and promoted as the new way of addressing the challenges facing the health care sector. Sweden has been a fore-runner and the concept was actively advocated during the past decade. Sweden was considered to have an advanced healthcare system with vast experience of measurements, hence a perfect place to implement the full concept of VBHC.

Starting with an effort to improve existing quality registers, the concept was brought to the hospital level with three university hospitals as pilots: Karolinska in Stockholm, Sahlgrenska in Gothenburg and Akademiska in Uppsala. As experience grew, so did criticism. The Swedish opinion definitely started to shift in 2016 and although some of the work is continued, today the concept is rarely used. However, these experiences have not been widely recognised in Europe and elsewhere. Nor have they been analysed or fully understood.

The general argument that we should focus on results and value created continues to be a focus in the European and global arenas. VBHC is still used as a concept, but has evolved in light of a growing critique, especially concerning the definition of value. We strongly argue that a thorough analysis of the VBHC components can cast a light on measures needed in order to create sound health systems that meet European standards of universality and equality.

Previous studies of the VBHC model, in both Sweden and internationally, have in most cases been oriented towards one of two approaches: Either, evidence-based assessments of the model, noting that the concept lacks evidence, or case-wise evaluation of proper implementation. Studies that analyses its general characteristics and purposefulness in various contexts are rare.

*In order to strengthen the state of knowledge, the Swedish Ministry of Health and Social Affairs therefore commissioned Leading Health Care Foundation, a Swedish independent academic think tank, to analyse VBHC from a broader, organisational perspective and taking the Swedish experiences into account. The results were published in the study *Value-based health care: Organisation theory perspectives on content, purposefulness and lessons for the future.*¹*

This brief draws significantly on the aforementioned study (available in Swedish on leadinghealthcare.se). The results indicate that VBHC, even though launched as

¹ Krohwinkel, A. et al (2019) *Värdebaserad vård: En organisationsteoretisk genomlysning av innehåll, ändamålsenlighet och lärdomar för framtiden* [eng: Value-based health care: Organisation theory perspectives on content, purposefulness and lessons for the future]. Report 2019:2, Leading Health Care. Published in Swedish.

something new, is a management concept comparable to and being a blend of previous concepts and models. Notably, VBHC claims to have a system-wide application and is put forward as a solution suitable regardless of contexts, care settings and political/cultural differences. This is a recurring feature of popular management models and an attractive feature for decision-makers – but calls for cautiousness. The one-size-fits-all-model tend to wither in the meeting with heterogeneous practices.

We hope that this policy brief will provide accessible knowledge and analysis from an organisational perspective that is useful when assessing VBHC and its purposefulness in various settings. But we also believe that it will be useful and applicable beyond VBHC – when future management models call for immediate consideration and decisions.

I would like to thank my fellow authors for their hard and conscious work. Also, the crew at the Ministry deserves a big thank you both for financial support and expertise. The European Observatory on Health Systems and Policies has been a valuable partner in the process of finalising this brief.

I wish all of you a happy and productive reading!

*Hans Winberg
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This policy brief was produced by the Leading Health Care Foundation, an independent Swedish academic think tank. It draws significantly on the Foundation's study in Swedish titled *Värdebaserad vård: En organisationsteoretisk genomlysning av innehåll, ändamålsenlighet och lärdomar för framtiden*, which was commissioned by the Swedish Ministry for Health and Social Affairs.

The study was conducted through a desk study of previous research, exploratory interviews of key actors, empirical case studies of Swedish hospitals and international policy processes, theoretical analysis of both the original concept and its applications and, finally, a discourse analysis of the Swedish public debate around VBHC.

The development of this policy brief was financially supported by the Swedish Ministry for Health and Social Affairs. The brief has benefitted from a substantial review by the European Observatory on Health Systems and Policies as well as from comments and discussion at the Nordic Network for Health Policy, Health Management, and Health Services Research Workshop 2021.

1. Introduction

How to meet increasing demand for health care in the context of constrained budgets and trends such as population aging and technological innovation is an ongoing debate in many countries. Increasing efficiency and reducing waste, for example by adopting new management models, have often been proposed as a solution. A few decades ago, concepts such as Lean, Total Quality Management and Six Sigma were examples of popular approaches to increasing production efficiency, focusing specifically on the organisation of care flows. More recently, value-based health care (VBHC) was launched by Michael Porter and Elizabeth Teisberg of the Harvard Business School, USA, as a solution with similar features, but with claims to offer more of a complete solution for the health care sector.

The VBHC model sets out to create more effective competition between providers in a health care system. The overall aim is increased *value* for patients, defined as health outcomes in relation to costs. Apart from proposing a new way of organizing care, VBHC suggests new forms of reimbursement as well as outcomes measurement, among other elements. Extensive measurement and comparison of outcomes and costs are key features of the model and serve as pre-conditions for the value-based competition that VBHC aims to achieve. Theoretically, the model rests on a free market logic with competition among providers and free choice by patients as its main tools to reach the objectives of higher quality and cost reduction. This reflects the US context for which the concept was developed.

When launched in European health care systems, the competition aspects have been toned-down in order to align with legal frameworks emphasizing equal access to health care rather than a free market. Moreover, the concept of value when suggesting a move to VBHC has been often interpreted flexibly to fit the particular contexts, and mixed with other notions of value such as allocative and societal value. At international policy level, the concept of VBHC has been given a multitude of meanings and usage, some more linked to the original model than others. At provider level, a wider range of measures has been implemented in the name of VBHC, such as increased patient involvement in organisational development, despite not being part of the original ideas.

Some of the initial interest in the VBHC model may be ascribed to the popularity of the ideas underpinning *New Public Management (NPM)*, which was the dominant public management philosophy at the time VBHC was launched and equally rests on a strong belief in management by results. Meanwhile, evidence about the results of implementing VBHC at full scale is scarce. In practice, the model has often been applied partwise and at individual hospitals rather than within the entire health care sector of a country or region. The national experiences available, such as the Swedish

experience described in this policy brief, have not been widely publicized internationally. Yet, the concept of VBHC and the notion of value continues to attract interest among health policy-makers around the world.

The aim of this policy brief is to contribute to a better understanding of VBHC as developed by Porter et al., and to clear some of the ambiguity around its purposefulness and use. We evaluate the assumptions underpinning the model both in the light of management and governance research (Section 2) as well as from the perspective of its practical implementation in Sweden (Section 3). We will conclude by drawing lessons from these evaluations and outlining alternative approaches to thinking about value.

2. Value-based health care in theory: what does it mean?

Value-based health care as conceived by Porter and Teisberg

Value-based health care (VBHC) is a framework for restructuring health services provision developed by professors Michael Porter and Elizabeth Teisberg from the Harvard Business School, USA. Porter, an economist specialised in business strategy and competitiveness, launched his ideas together with Teisberg in the book titled *Redefining Health Care: Creating Value-Based Competition on Results* in 2006. Their starting point was that competition in the US health care system took place at the wrong level, namely at the level of discrete services, and over the wrong things, such as cost per procedure, which resulted in shifting costs from payers to patients.

With the American health system and its competitive environment as a starting point, the solution that Porter and Teisberg put forward was to shift towards ‘healthier’ provider competition based on providers’ achieved *value*, expressed as patient outcomes in relation to costs. They argued that providers should focus on the health outcomes of entire care cycles and their total cost, rather than on separate treatments or services. They claimed that such improved competition among health care providers, which they originally called value-based competition and later renamed as *value-based health care*, would improve the fragmented, largely supply-driven system and result in higher value for patients.

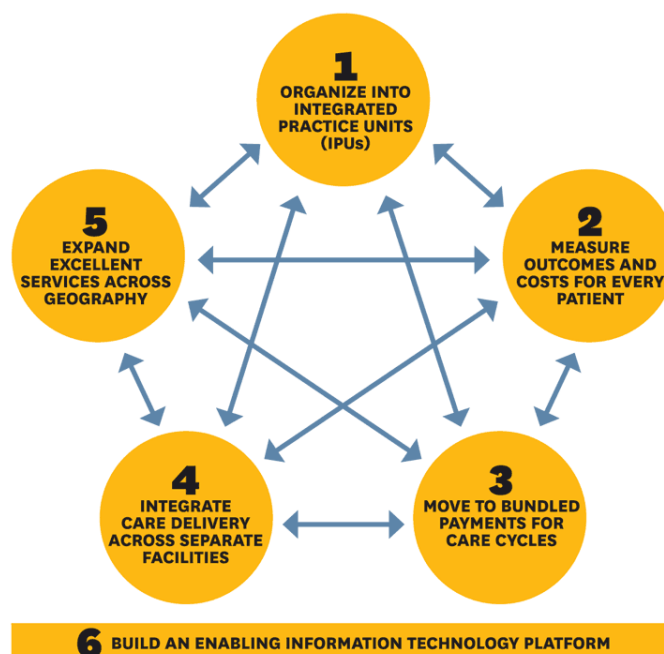
Figure 1. The value equation in value-based health care

$$\text{VALUE} = \text{PATIENT OUTCOMES} / \text{COSTS}$$

Source: Porter & Teisberg (2006)

Examples of concrete steps that Porter et al suggest to move towards value-based health care include reorganising care production around medical conditions, measuring outcomes and costs at the individual patient level, moving from fee-for-service to bundled payments, increasing specialisation of providers and allowing the best providers to expand geographically. The agenda was summarized into six components, as shown in Figure 2 below.

Figure 2: The six components of value-based health care



Source: Porter & Lee (2013)

Under the first component of their framework, Porter and Teisberg argue that the traditional organisational structure of health care provision, which is based on medical specialties and the supply side of care, is outdated. Instead health care, just like other businesses, should be organised around the customer and the demand side, i.e. patient's medical condition. In an organisation centred around medical conditions, the personnel (both clinical and non-clinical) is expected to work in teams (so-called integrated practice units) to provide the full cycle of care for the patient's condition (Porter & Teisberg, 2006).

Under the second component, Porter and Teisberg argue that rigorous measurement is key for improving the functionality of the health care sector. In order to enable competition between providers based on results, outcomes and costs should be measured for every patient over the full care cycle (Porter & Teisberg, 2006). This should cover both short- and longer-term outcomes, including the ultimate results of the care cycle. To ensure validity and comparability, measurement should control for any patient characteristics that can influence the results, including initial health conditions, co-morbidities and patients' genetic differences. Cost measurement should also comprise the entire care cycle, with all expenses traced to the individual patient (Porter & Lee, 2013).

The third component of Porter and Teisberg's framework postulates the use of bundled payments, replacing fee-for-service payment for discrete services that had been the dominant payment mechanism in the American health system. Bundled payments

should be set in advance, cover full care cycles, and incorporate risk adjustment in order to, for example, to hold providers accountable for avoidable complications and at the same time not to punish them for the underlying variations in the patients' health status (Porter & Lee, 2013). The motivation behind this postulate was that bundled payments are believed to encourage teamwork and coordination around patients' overall care needs. In addition, moving towards single billing can also help lower administrative costs (Porter & Teisberg, 2006).

Under the fourth and fifth components of the framework, Porter and Teisberg propose how to design the health care market in order to optimise the outcomes of care episodes. They argue that providers should specialise in the areas where they are the most effective. Moreover, providers should be multi-sited and effectively distribute care across their facilities, for example by reserving high cost centres for complex medical conditions. Integration of care pathways across location shall be ensured. Competition between providers, where patients make choices based on publicly available measurements of results, should then allow for superior providers to expand geographically (Porter & Lee, 2013). Here the model assumes a health system based on freely accessible and comparable information, as well as the possibility for patients to freely shop services according to their preferences.

Finally, the five components described above should be supported by enabling information technology (IT) systems. Porter and Teisberg emphasize that the IT systems should allow for following patients across care pathways, using standardised terminology. Furthermore, all types of patient data should be collected in a single place from where it can be accessed by everyone involved in the provision of care (Porter & Lee, 2013).

Critique based on management research

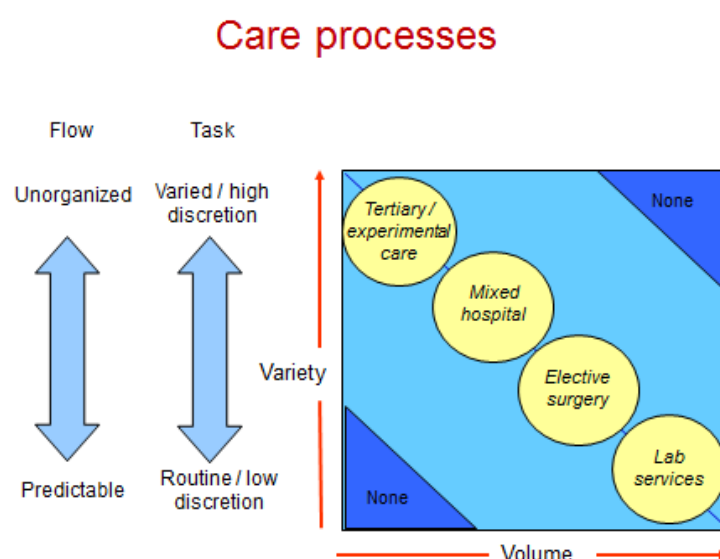
In this section we analyse the six components of Porter and Teisberg's VBHC framework from the perspective of management sciences. We also contrast its assumptions with other quality improvement frameworks. We draw mainly on operations management literature, which is a strand of organizational research concerned with how production processes can be designed, controlled and improved (e.g. Slack et al, 2013).

(1) Organising care around medical conditions

In the VBHC framework, streamlining organisation of health care provision around medical conditions is implied as a pre-condition for comparing health care providers, which in turn is deemed to encourage competition among them. Key critique of these assumptions can be found in the operations management literature, where process standardisation is described as suitable for production processes that are characterised by high volumes and low variety (see Figure 3). In the area of health care, this applies

to medical conditions where there are many patients with similar needs that are easy to anticipate. Examples of such care processes are laboratory services and knee and hip replacement procedures (elective care). However, when patient needs are unique and/or difficult to predict, the care process needs to be flexible enough to be adjusted to each patients' needs. This is often the case for highly specialised care but also for patients with multiple conditions. In sum, operations management research questions the assumption that all care processes lend themselves to standardization in a unified way. From this perspective, the competition dynamics that VBHC envisions will be hard to achieve in practice, even in a system with free competition within the healthcare sector.

Figure 3: Different types of care and their volume-variety characteristics



Source: Authors, adapted from Slack et al. (2016, p. 190)

(2) Measuring outcomes and costs for every patient

According to Porter and Teisberg, measurement of comparable results drives competition and is thus the key driver of quality improvement. This assumption has been questioned by management theorists. For example, Mintzberg (2017) argues that the ability to capture illnesses with standardised categories and measurement is limited since health conditions can fall *beyond* the existing disease categories (e.g. rare or newly diagnosed conditions that lack an evidence-base), *across* the categories (patients with multiple conditions) and *beneath* the categories (differences in patients' physical and mental characteristics, culture, etc.). From this perspective, any measurement must be informed by professional judgement. Moreover, measuring is expensive and increases administrative costs, which in some health systems, such as the US one, is already very high (ibid.).

Furthermore, from an operations management perspective, the value measured in Porter and Teisberg's model represents only one out of many aspects of value. Several quality dimensions, such as patients' individual perspectives on what outcomes matter the most to them, risk being lost when measures are standardised. According to Porter and Teisberg, process measures such as those capturing time aspects (e.g. waiting times or the duration of the entire episode of care) and flexibility aspects (e.g. possibility to choose among different care options, adaptability of care process, continuity of care), which may matter to the patients, are only to be included in case they have a direct impact on the chosen outcomes and costs. While VBHC is sometimes presented as patient-centred and focused on "what matters to the patient", this rhetoric has relevance only at an aggregated level and with the *standard patient* in mind (see also Box 1).

Box 1: VBHC versus other quality improvement frameworks

Although VBHC was launched as a new framework, it includes components that are similar to those found in other quality improvement models from the management field such Total Quality Management (TQM) and Lean production.

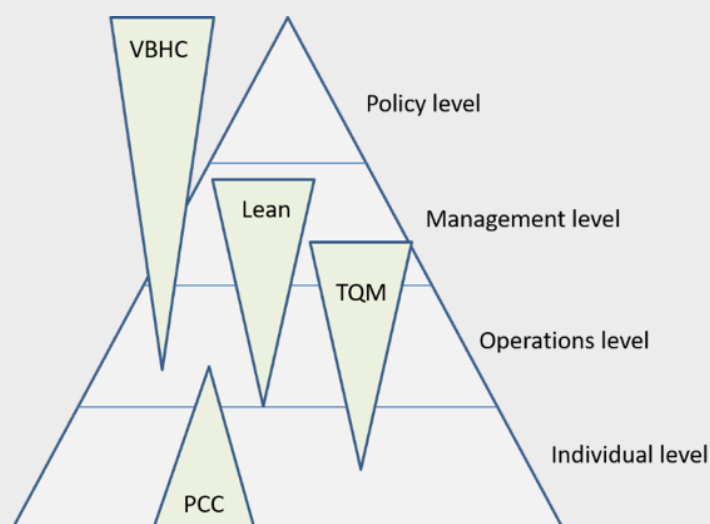
Both models (TQM and Lean) originated from the experiences of Japanese manufacturers, with Lean specifically derived from the experiences of car manufacturer Toyota (Deming, 1986). These two management models have been used for improving care processes, reducing shortcomings in quality and facilitating co-ordination between services and organizational units. They both aim to improve the end result for the customer: TQM by delegating responsibility to the employees and changing their focus from their current task to what is needed in the next step of the production process, and Lean by focusing on reducing waste in the production process by involving all employees in the improvement work and shifting attention from efficiency of individual tasks to the production flow and its end result (Womack & Jones, 2003).

All three models (TQM, Lean and VBHC) are process-oriented and focus on improving care flows through standardisation of care processes and measuring outcomes or efficiency of the care flow. They thus presuppose the existence of well-defined patient groups and care episodes. However, the rationale behind focusing on standardization and measurement differs among the three models: whereas in TQM and Lean the goal is to improve care processes at the local level (with TQM slightly more focused on individual patients), the goal of VBHC is to enable comparability of providers at the system level (Figure 2). The latter requires measurements to be standardised for all providers, which risks compromising the relevance of the data at the operations level.

The use of measurements as a basis for competition may also introduce incentives for manipulation of data, i.e. possible side-effects need to be taken into account. Further,

producing comparable measurements also presupposes process control at provider level, since all providers need to follow a similar process in order for the measures to be comparable.

Figure 4: Differences in the level and focus of various quality improvement frameworks



Source: Authors

Another method for improvement work, Person-Centred Care (PCC) is a movement originating from ambitions within health care since the 1960s to apply a holistic approach to patients and their care, respect patients' own experiences and increase their influence in decisions regarding their own care. PCC can also be viewed as a philosophy that puts emphasis on the patient's ability to contribute to care, as opposed to mainly being a passive recipient of diagnosis and treatment. Common methods postulated within this framework are shared decision-making, teamwork among care staff, facilitation of self-care and methods for increased communication between patients and care professionals (McCormack, B. et al, 2015).

PCC, as opposed to TQM, Lean and VBHC, aims to improve care by tailoring it to individual patient needs and experiences. It can thus be described as having a bottom-up approach. It is therefore more applicable to complex care needs where the variation among patients is substantial.

(3) Moving to bundled payments for care cycles

Bundled payments are a form of variable payment encompassing aggregated care episodes from diagnosis to recovery. This can be contrasted to fee-for-service models, in which providers are paid for discrete medical procedures. In theory, bundled payments can also be linked to performance, i.e. adjusted depending on the outcomes

of the care episode. Porter and Teisberg argue that bundled payments incentivise care coordination and reduce fragmentation. In order to provide clear incentives, remunerations levels are to be set in advance, which however also presupposes that treatments are easy to anticipate and define and that they have a clear point of completion. This is true for some types of care, such as elective surgery, provided that patients are otherwise healthy. For patients with chronic conditions as well as for those with more complex care needs, however, it is difficult to predict a care cycle in advance and estimate its cost. Bundled payment according to the VBHC model is therefore best suited for a limited subset of patients and conditions where it is fairly easy to produce measurements and estimate costs.

(4) Integrating care delivery & (5) Expanding geographic reach

The VBHC model suggests that health care providers should concentrate on those care processes where they are superior compared to others, i.e. where they have a competitive advantage. It assumes that with growing volume and expanding geographical reach, specialised care providers will benefit from economies of scale. Specialization will allow to go beyond multisite organizations that suffer from duplications. It will also allow for focused integration of care around conditions.

This line of reasoning is supported by Porter and Teisberg's studies of hospital units specialised in elective surgery, such as hip replacement surgery, knee surgery and cataract surgery, where good results have been obtained by clinics focusing on specific care processes. Applying the same logic to broader areas like primary care is however problematic. For example, it is not clear how it could be applied to preventive care or care aimed at patients who have combined health and social care needs – all of which might require broader competencies and/or geographic proximity.

(6) Building an enabling information technology platform

Finally, the need for developing supportive IT systems as outlined in the VBHC model reflects a fundamental challenge that many health reforms have been faced with. A common problem is how to attribute data to cross-functional processes or aggregate results, when data is dispersed across IT systems that follow organizational or medical divisions. The extent and detail of public reporting mechanisms also varies greatly between health care systems. Reforms that focus on a system-level transformation, such as VBHC, thus face the double challenge of developing central IT structures while local care organisations are being changed. However, although Porter and Teisberg acknowledge that IT system design is a prerequisite to implementing VBHC, implementation studies show that challenges related to outdated IT systems risk being treated as residual and are temporarily bypassed by parallel data collection and processing (see further section 3 of this brief).

Critique based on national health system differences

Some of the further critique of Porter and Teisberg's model has been grounded in the differences between the US, where the model was developed, and the European contexts (e. g. Figueroa et al., 2019).

The VBHC model assumes that providers openly compete with each other (in a given geographic area) and patients choose the most efficient ones among them. This makes sense in the US context, where patients pay a substantial amount of their care out-of-pocket, which makes them likely to opt for the cheapest option with the best result. In systems where the individual patient bears less of the cost burden such incentives are less likely to have a strong impact. Research has shown that even when public information on provider results are available, patients might choose their care-giver based on other rationales such as proximity.

Apart from general doubts about the likelihood of patients making purely rational choices according to VBHC assumptions, legal and organisational constraints in how health care is provided in the European health systems makes the VBHC model is less applicable in the European context compared to the American one. Notably, few national health care systems allow free provider establishment and free patients choice within all areas of care. Also, it has been questioned whether the VBHC definition of value, with its focus on increasing cost-effectiveness from a provider perspective, is broad enough for the European context. For example, the distribution of value (equality among patients) is an aspect that is often highlighted in European health care policy, but not covered by Porter's theory.

Box 2: The Swedish health care system in brief

The Swedish health system is committed to ensuring the health and well-being of all citizens and abides by the principles of human dignity, need and solidarity, and cost-effectiveness. The state is responsible for overall health policy, while the funding and provision of care services lies largely with the county councils and regions. Social and elderly care as well as a substantial proportion of home-based primary care rests on local governments. Almost all hospitals are owned by the county councils while about half of all primary care centres are run by private providers. There is free establishment for primary care providers who are accredited, and patients have right to choose their own general practitioner. Patients are free to contact specialists directly, but in the majority of cases referred to specialized care goes through the primary healthcare centres.

Health care expenditure is mainly tax funded and is equivalent to 10.9% of GDP (2019). The number of acute care hospital beds is below the European Union (EU) average. In

the past, the Achilles' heel of Swedish health care included long waiting times for diagnosis and treatment and divergence in quality of care between regions and socioeconomic groups. Addressing long waiting times remains a key policy objective along with improving access for patients and care takers. Other important reforms over the past decades relate to: concentrating hospital services; improving coordinated care; increasing choice, competition and privatization in primary care; privatization and competition in the pharmacy sector; increasing attention to public comparison of quality and efficiency indicators and responsiveness to patients' needs. Reforms are often introduced on the local level, thus the pattern of reform varies across local government, although mimicking behaviour usually occurs (Anell et al, 2012).

3. Value-based health care in practice: how has it worked?

The concept of VBHC claims to have wide applicability and it has been implemented in a range of settings. There is no example of full implementation of VBHC at the national health system level. However, the model has been partly implemented among individual providers in a number of countries. In addition, the concept is being used in various projects at the international policy level, for example as a basis for developing measurements of health system performance and new pricing models in the pharmaceuticals and med-tech industries. However, the extent to which the latter initiatives represent examples of the original VBHC model is debatable. In this section, we focus on the experiences drawn from implementation at the provider level, more specifically three large Swedish university hospitals. The account is largely based on the aforementioned study of Krohwinkel et al. (2019).

Application of VBHC at the hospital level in Sweden

Porter et al. (2006, 2013) refer to a number of examples of practical implementation of VBHC at the hospital level. These include the Martini Klinik in Germany and Kaiser Permanente, the Cleveland Clinic, and the Mayo Clinic in the USA. However, these examples existed well before VBHC was developed theoretically (for example, Martini Klinik, which specialises in prostate surgery, has collected data on outcomes since the early 1990s for fine-tuning their surgical methods) and hence may be seen as examples of general improvement work rather than an outright application of VBHC.

In this section will thus concentrate on cases where VBHC has been implemented explicitly *based on* Porter and Teisberg's theory. In a number of these cases, Boston Consulting Group (BCG) – a global management consulting firm – has been contracted to assist with the implementation of the VBHC model. This was also the case in Sweden, which has served as a global node for the company's work on VBHC, based on a collaboration between Michael Porter and Stefan Larsson, managing director at BCG's Stockholm office. Sweden was thought to be particularly well suited for introducing VBHC due to its long tradition of outcomes measurements through quality registries (BCG 2010). Partly based on BCG's recommendation, the Swedish government invested heavily into developing the registries, with funding almost quintupling between 2011 and 2013. The Ministry of Health also financed a collaboration initiative between seven regions aimed at developing value-based payment models.

Although the Swedish government never officially endorsed or decided on VBHC as a model for Swedish health care, the model became influential by the individual decisions of the three largest university hospitals in the country. Between 2013-2017, the three largest university hospitals in Sweden, Karolinska University Hospital, Sahlgrenska University Hospital and Uppsala University Hospital, implemented the VBHC model to varying degrees. BCG was contracted in all three cases to support the implementation process, with its involvement varying from 4 months to 4 years at each site.

The implementation followed BCG's six-step transformation agenda (see Box 3), focusing mostly on the VBHC model's second principle of measuring outcomes and costs (cf. Figure 2). The first and sixth components of VBHC were also implemented – care was re-organized around medical conditions and all three hospitals worked to adjust their internal IT systems to support outcome and cost measurements. Other dimensions of VBHC such as bundled payments were investigated in separate projects with external actors, but not part of local implementation as the hospital payment system in Sweden is regulated and administered by the regions, which are also the prime purchasers of health care.

Box 3: Boston Consulting Group as a driver of VBHC in Sweden

The concept of VBHC as introduced by Porter and Teisberg was developed further by BCG to facilitate its spread and support its implementation internationally, advocating the VBHC value equation (expressed as patient outcomes in relation to costs) as the guiding principle for the public sector in general.

BCG initially developed a strategy for implementing VBHC at the national level in Sweden (BCG, 2013). Subsequently, they switched focus to the provider level and published a guide with a six-step transformation agenda for how to implement VBHC in individual hospitals (BCG, 2014). The six steps are:

Step 1: Conduct self-assessment of the hospital's performance in key disease areas or medical conditions;

Step 2: Launch pilots focused on a disease or procedure;

Step 3: Form multidisciplinary teams that define key outcome metrics for each patient group;

Step 4: Teams then map costs along the value chain;

Step 5: Subsequently, teams compile improvement suggestions for how to change processes, roles and responsibilities; and

Step 6: Develop recommendations for how the continuous tracking of outcomes and costs per patient can be institutionalised.

BCG illustrates the implementation of their six-step transformation agenda with several examples. One of them is Texas Health Resources (THR) – a health-care-delivery system in Texas consisting of 25 hospitals. THR has worked with BCG to develop a set of value-based bundled offerings for employers, insurance plans and individual consumers. As the first step, clinicians developed outcomes measures and, as a second step, multidisciplinary teams (including physicians, facility staff where the procedures are performed and staff who provide analytical and financial support) redesigned the clinical-care pathway to achieve the outcomes identified by the clinicians.²

Another example is Munich City Hospital in Germany where BCG was contracted in 2013 to change the operating model in order to attain financial sustainability. BCG describes this work as value-based consolidation. The work entailed identifying where the hospital delivered patient value, i.e. which units had sufficient patient volumes to deliver high-quality outcomes, and how to increase the number of beds in those areas. Hence, high-performing units were maintained and the others consolidated.³

During implementation, all the three Swedish university hospitals initially focused on finding suitable care processes for measuring outcomes and to some extent also costs. For example, the Uppsala University Hospital initially chose to focus on three pilot processes – diabetes, orthogeriatrics (orthopaedic care for elderly) and esophageal cancer – and formed working groups to identify outcomes and cost metrics to be followed up. The number of care processes included in the work were gradually expanded. At two out of three sites – Karolinska University Hospital and Uppsala University Hospital – care was re-organized around medical conditions, whereas Sahlgrenska University Hospital decided against it after conducting an internal evaluation. The re-organisation was most profound in the case of Karolinska University Hospital. The implementation there also coincided with the move to a new hospital building, which allowed a shorter timespan for the process.

While the three hospitals implemented fairly similar changes, one significant difference was how the implementation process was organized and communicated internally. In the case of Karolinska University Hospital, the process was consultant-led with BCG being contracted for a 4-year-period. Communication focused on VBHC as something *new* and arguments for VBHC were borrowed directly from Porter and Teisberg. This can be contrasted with Uppsala University Hospital where the process was led internally with BCG's involvement lasting only 4 months. Here, VBHC was not

² BCG (2014) *The Value-Based Hospital: A Transformation Agenda for Health Care Providers*, p. 11.

³ BCG (2014) *The Value-Based Hospital: A Transformation Agenda for Health Care Providers*, p. 21.

launched as something new, but rather as a continuation of the hospital's previous process-oriented improvement work.

Experiences from the introduction of VBHC are best documented in the case of Karolinska University Hospital. An internal evaluation by the Hospital Board (Karolinska University Hospital, 2019) showed that the implementation of VBHC caused severe problems, for example related to complex patients not fitting the new and relatively narrow patient flows, flawed outcome measurements and difficulties with IT system changes. Moreover, the evaluation described staff experiencing increased fragmentation of care, increased administrative burden as a result of more referrals between patient flows, lack of clarity around responsibilities and a trend towards centralised decision-making. The re-organization around patient flows had led to an increased number of organisational units (partly because the clinic-based organization was not remounted accordingly). All-in-all, the administrative burden and costs had increased without tangible quality improvement. As a result, staffs' trust in hospital management following the implementation of VBHC was low and the hospital's director resigned. The organisation model is currently being reviewed.

In the case of Sahlgrenska, implementation of VBHC progressed at a slower pace than at Karolinska. Result were varied – an evaluation in 2017 of 31 care processes that had undergone BCG's six-step agenda showed that clinics already working systematically with other quality improvement methods had had an easier time adopting to VBHC. The hospital was recommended to refrain from major changes such as re-organising care around medical conditions. It was suggested to continue using VBHC as a guiding principle while also considering other models for patient centeredness and process orientation.

At Uppsala University hospital, implementation of VBHC progressed according to a local programme that was less extensive and more open to adjustments than BCG:s agenda. In contrast to the other hospitals, implementation did not meet much criticism. One contributing factor was the leadership by an internal change agent creating legitimacy during the process. The hospital continues to work with an own interpretation of the model emphasizing patient involvement to identify improvements in care pathways and evaluate outcomes.

Box 4: Media coverage of the launch of VBHC in Sweden

Our review of the Swedish media debate on VBHC between 2012 and 2018 shows increasing interest but also escalating critique against the model. During the early years, there was not much debate in the media and the few articles published were largely optimistic about VBHC contributing to improved efficiency and better care. Over time, critique has appeared and escalated. One argument was that VBHC is not

supported by evidence, or that existing evidence speak against the model. Another argument was that outcome measurement and paying providers in accordance with VBHC may bring negative side effects in the form of data manipulation.

During 2016-2018 the critique escalated further, especially focusing on the Karolinska University Hospital and the problems induced by its reorganisation. Changes were reported as being consultant-led and implemented with a top-down approach. Media also reported on other issues not directly related to the implementation of VBHC, such as billing of consultants, conflicts of interest, construction issues in the new hospital building, etc.

As media pressure intensified, earlier proponents of the concept started distancing themselves from VBHC, claiming that it was more of a guiding philosophy rather than a direct driver of actual change processes. The media pressure finally contributed to resignations within the Karolinska hospital management and the implementation of VBHC stalled. Thereafter, attention has shifted towards retrospective analysis of the concept and implemented changes.

Applications beyond the provider level

In parallel to the implementation of VBHC at their local hospitals in Sweden, professional representatives from all three sites have been participating in international development work around outcomes measurement, which can be seen as an attempt at applying parts of Porter and Teisberg's model at a higher system level (Box 5). The Swedish government has also been active in, and raised some concerns about, initiatives within international policy cooperation to measure and compare health system performance based on VBHC ideas (Box 6).

Box 5: Standardisation of outcomes measurement through ICHOM

The International Consortium of Outcomes Measurement (ICHOM) was founded in 2012 by Michael Porter, Stefan Larsson from the Boston Consulting Group (BCG) and Martin Ingvar at the Karolinska Institute in Sweden. The ICHOM publishes sets of standardised metrics and risk adjustment variables for various medical conditions to enable measurements and facilitate comparisons between providers, with a clear foundation in Porter's VBHC model. The work is carried out through engagement of individual professionals, but also has a certain number of organizational partners, which are supposed to act as pilots for the collection and use of data. Karolinska University was a strategic partner between 2016-2018.

ICHOM's 'standard sets' of metrics are been developed by working groups composed of medical doctors, patient representatives and other health care experts from different countries and aim to identify outcomes that matter the most to patients with a specific diagnosis or condition. The outcome sets cover different types of indicators, including general vital status, disease-specific medical control parameters, chronic complications, acute events, and patient-reported outcomes such as psychological wellbeing. ICHOM provides recommendations for data retrieval and questionnaires for the collection of some of the metrics. The metrics have to be recorded in the same way and with the same periodicity as defined in the standard sets. To date, around 30 standard sets have been developed and further sets are under development, with published sets being continually reviewed.

Although development of measurements has been a prioritized activity in the Swedish implementation of VBHC, concerns have been raised about the additional administrative burden of reporting according to international standards, alongside national reporting mechanisms. In 2017, the Swedish region of Västra Götaland scrutinized four ICHOM standard sets to assess what proportion of the variables in each set could be captured in the existing quality registries and databases in Sweden. They found that data on outcomes have low coverage in the existing databases and data in the quality registries are not collected in the same way as data the ICHOM data, making them non-comparable (VGR, 2017). Expected synergies between existing Swedish data and VBHC (cf. BCG 2010) thus failed to materialize.

Box 6: The PaRiS initiative led by the OECD

The OECD is an important driving force behind the application of VBHC at the international policy level, especially in the development and implementation of internationally comparable measurements. This work is carried out through the Patient-Reported Indicators Survey (PaRiS) initiative that was launched in 2017 when the OECD and ICHOM signed a Letter of Intent to collaborate on the collection, analysis and publishing of patient reported outcomes for international comparison. A key argument behind this initiative was that the already available data on survival and medical results must be complemented with measurements of "what matters most to patients". The collaborating organizations framed this as "an important step in moving towards VBHC" (OECD/ICHOM, 2017).

In the PaRiS programme, collection of patient-reported outcomes is standardised for key disease areas and data are being analysed and published to inform and support patients, clinicians and policy-makers in their decisions. The aim is to enable

benchmarking among national health care providers as well as among health systems internationally, which is similar to the OECD's initiative in the area of education – the Programme for International Student Assessment (PISA).

The PaRIS initiative is well supported, but has also met some resistance from individual OECD countries. The Swedish government, for example, decided in 2019 not to take an active part in the programme, referring among other things to the unclear ownership of patient data. Before that, an investigation conducted by the Swedish National Board of Health and Welfare expressed concerns regarding the added value for individual caregivers, which would have few possibilities to adapt data collection to local conditions, and would only be able to use the data at an aggregate level, which would limit its use for monitoring local efforts in patient-related improvement work (Socialstyrelsen, 2018). Researchers have also pointed out the important difference between collecting standardized measurements for international benchmarking, and qualitatively asking individual patients about what matters to them (Krohwinkel et. al, 2019).

In sum, the Swedish experience of VBHC started out with high expectations of a national system transformation, but was in practice mostly oriented towards implementation at provider level. Given that all three major university hospitals decided on implementing VBHC, the impact and visibility of the model was nevertheless high. Within the hospitals, VBHC was found to have varying applicability within different care areas. As predicted by management science, easily defined care processes within elective care were found to fit better with the VBHC principles than care aimed at patients with complex needs. In addition to model fit, management of the implementation process itself had decisive impact on perceived results, which partly explains the hospitals' differing experiences. The partly negative outcomes at provider level have subsequently led to caution around national participation in international initiatives that are perceived as having a strong connection to the model and its proponents.

4. Lessons in brief

Applications of VBHC can be found in several countries, with implementations having been particularly early and far-reaching in Sweden. Yet, even in Sweden, focus has been on the provider level and there is no example of a pure implementation of the model. At the international policy level, VBHC is subject to an ongoing discussion about possible applications, with initiatives at measuring and comparing outcomes as the most tangible ones. The connection to VBHC in its original form is at best partial. Nevertheless, a few lessons can be drawn from this limited experience:

- Value-based health care (VBHC) is a model for reforming health care provision resting on the free market logic as the organising principle for the public sector, as opposed to how European health care systems are generally set up. This reflects the American origin of the concept.
- VBHC claims universal applicability within the health care sector but is in practice more suitable within limited parts of health care, such as elective care where care processes are easily defined and easy to anticipate. In these cases, key features of VBHC such as organisation around medical conditions and measurement of entire care cycle results, may be purposeful. It is less suited for improving other areas of the health care system, such as primary care, preventive health and the care of more complex or multiple conditions.
- VBHC has been launched as a new concept but is comparable – at the provider level – to other management models emphasising improvement work within care flows, such as Lean production and Total Quality Management (TQM). These include similar individual components but differ in their aim. Whereas Lean and TQM advocate results measurement to inform and improve local processes, results measurement in VBHC aims to enable system-level comparability between caregivers. The latter feature makes the data less useful for improvement work at the local practice.
- VBHC relies on large amounts of data to be gathered, standardised, aggregated and compared. Besides being costly, there are risks associated with management based on system-level data. These include the risk of selection bias, measurements missing relevant aspects better caught by professional judgement, and the risk of measurements being of limited relevance for development at the local level. Experiences from implementing VBHC at Swedish hospitals also point to difficulties in fitting patients with complex needs into the new care flows as well as other effects such as increased fragmentation, administration and costs.

- At an international policy level, the most tangible (partial) application of VBHC involves measurements of care results for international comparisons. Many actors consider themselves as working value-based, but the meaning of it varies. One example of the confusion is the claim that VBHC promotes “what matters to the patient” even though it conceptually relies on standardisation and lacks a mechanism to consider the individual opinions of caretakers. At the provider level, patient-centered care may be achieved more effectively by customized direct measures in local care practice, rather than by creating a large, system-level incentive scheme such as VBHC.

A few more general conclusions about management model usage and spread can also be drawn:

1. Universal models fit badly almost everywhere

A common feature of widely spread organisational concepts is that these are presented as universal, i.e. useful relatively independent of the place for implementation. When being launched in individual organisations, the importance of local features is often neglected, or alternatively, parts of the organisation that fit particularly well with the model are being highlighted. This may not be a problem in relation to management models for internal organisational change where the interaction with the outside world is limited. However, VBHC aims to generate dynamics in an entire sector, which means that its individual components are designed bearing in mind the effect they are intended to have at the system level. This also makes it difficult to adapt the model adequately to the conditions and needs of local organisations.

2. Large amounts of standardised data is a blunt management tool

Management models such as VBHC are based on large amounts of data to be standardised, aggregated and compared, in order to subsequently lead to action. It reflects a belief that it is possible to remotely control a certain outcome without the local context influencing that outcome. This perspective has characterised the public sector in many Western countries in recent decades, in the general debate often criticized and referred to as New Public Management. VBHC is based on the same theory of change and entails the same risks for administrative superstructure, side effects of measurement and questionable goal fulfilment.

3. Watch out for unidirectional management

In order for VBHC to induce the dynamic effects of value-based competition, improved efficiency in accordance with the value equation would need to become the overall goal of a whole health system. This would displace other equally important values such as equality. An alternative strategy is to make room for constant value weigh-ins and for these to be subject to political considerations.

Ways forward

At the international policy level, the concept of VBHC has been given a multitude of meanings and usage, some more linked to the original concept than others. At the writing of this brief, discussions about Porter's original model are being submerged into broader work on understanding the notion of value within health care. The debate continues as health systems around the world continue to face pressure to make the most out of the scarce resources, and this preoccupation with the value created by health systems will likely only intensify given the ongoing COVID-19 pandemic and the global economic crisis looming in its aftermath.

One example of a recent initiative in this area is the work of the European Commission's Expert Panel on Effective Ways of Investing in Health (EXPH). The Commission has not taken an active part in the VBHC discussion but did recently request its Expert Panel on Effective Ways of Investing in Health (EXPH) to provide an analysis on how to define value in VBHC.⁴ The Panel expressed concern regarding Porter and Teisberg's use of the concept of value and proposed to widen the definition of value.

The panel notes that the concept of solidarity is deeply rooted in European history and that the commitment to universal health care is enshrined in the Charter of Fundamental Rights of the European Union. Therefore, value as defined by Porter in terms of outcomes over costs, is seen as too narrow for being the guiding principle of a solidarity-based health care system. The Panel thus proposes a broader definition built on four value-pillars: (1) Personal value – appropriate care to achieve patients' personal goal; (2) Technical value – achievement of best possible outcomes with available resources; (3) Allocative value – equitable distribution of resources across all patient groups; (4) Societal value – contribution of healthcare to social participation and connectedness (European Commission, 2019).

Following on this work, the European Observatory on Health Systems and Policies published a policy brief titled "*Building on value-based health care: Towards a health systems perspective*" (Smith et al, 2020), in which it calls for a shared understanding of value that embraces the health system in its entirety, including preventive services and other public health functions. The authors explain that health systems are shaped by a wide array of actors, including national policy-makers, purchasers, providers, practitioners, citizens and patients. These different actors make important but discrete contributions to value, so in order to maximize it, their actions should be aligned. The paper argues that this could be achieved by effective governance of the whole health system. The aim is expressed as building a *value-creating health system* (thus moving

⁴ The EXPH is a multidisciplinary and independent expert panel set up by the EC to provide advice.

away from the narrower notion of *value-based health care*), with the overarching goal of maximizing societal wellbeing.

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