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Integrating Value-based Healthcare into the Swedish Healthcare System

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Cholada Kittipittayakorn[1] and A.M.M. Shahiduzzaman Quoreshi[2]

Abstract

Healthcare systems worldwide face high demand due to ageing populations, infectious diseases and other factors. Moreover, healthcare costs continue to rise. The value-based healthcare (VBHC) concept has recently been embraced by policymakers as a framework to improve healthcare quality and reduce costs. In VBHC, healthcare providers are rewarded based on patient health outcomes. VBHC shifts the focus of healthcare systems from the volume and intensity of services provided to the quality of those services. The Swedish healthcare system used to be a model for the world, but this is no longer the case. It now faces challenges such as a shortage of healthcare workers, long waiting times, bureaucracy, an ageing population and poor-quality treatment. Researchers and policymakers have attempted to introduce VBHC into the Swedish healthcare system. However, few studies have addressed how to implement VBHC in Sweden or what challenges the system may encounter. This research presents the prerequisites and suggestions for implementing VBHC, and discusses the challenges of doing so in the Swedish healthcare system. By adopting VBHC, the Swedish healthcare system can benefit from improved quality of care and reduced healthcare costs.

Keywords

Value-based healthcare, Swedish healthcare system, bundled payment, health outcomes, healthcare costs

Introduction

Many countries face rapidly ageing populations (Jones, 2020; United Nations, Department of Economic and Social Affairs, Population Division, 2017), which require increased resources for their healthcare systems. In most advanced economies, healthcare spending constitutes a significant proportion of gross domestic product (GDP) (World Bank, 2022b). Consequently, healthcare systems worldwide struggle to meet rising health demands through efficient resource allocation and value creation for individuals and communities (Porter, 2010b). Several countries have tried to reform their healthcare systems (Braithwaite et al., 2017; Rechel & McKee, 2009). Sweden was an early pioneer of market-oriented reform in publicly funded healthcare. Its healthcare system is primarily based on tax-funded financing and publicly operated hospitals (Immergut et al., 2021).

Swedish healthcare is managed by local governments at regional (county) and municipal levels (Anell, 2005). Over the past two decades, healthcare systems have been under pressure to improve performance and reduce costs (Anell, 2005). Swedish healthcare expenditure per capita and resource inputs have been rising, though more slowly than in other EU countries (Organisation for Economic Co-operation and Development & European Union, 2020). Citizens can generally choose their primary care physician, but many bypass primary care and seek treatment directly at hospitals, with around half of all doctor visits taking place there. Patients may also visit healthcare centres outside their county, although this is discouraged (Anell, 2005).

The Swedish healthcare system has undergone reforms aimed at improving efficiency in healthcare delivery (Tynkkynen et al., 2022). These reforms target reducing healthcare costs, improving care quality, enhancing access to specialists and providing more patient-centred care (Baumann, 2021; Fiscella, 2011; Meng et al., 2019). However, Sweden's healthcare system no longer enjoys its previous status as a global model, partly due to long patient waiting times (McIntyre & Chow, 2020). A 2010 Commonwealth Fund survey revealed that over 50% of patients had to wait four weeks or more to see a specialist (The Commonwealth Fund, 2010). Long waiting times have been an issue since the late 1980s (Anell, 2005), prompting the government to implement reforms aimed at reducing delays.

In 1992, the Swedish government introduced a 3-month guarantee for treatments with long waiting times, such as hip replacement and cataract surgery (Hanning, 1996). If patients

[1]WMG, University of Warwick, Coventry, UK
[2]Department of Industrial Economics, Blekinge Institute of Technology, Karlskrona, Sweden
Corresponding author:
Cholada Kittipittayakorn, WMG, University of Warwick, Coventry CV4 7AL, UK.
E-mail: cholada.kittipittayakorn@warwick.ac.uk

could not receive treatment within 3 months, they were offered the option to transfer to a hospital in another county. Despite these efforts, long waiting times persisted, and the 3-month guarantee was criticised for not aligning with national health policy priorities.

Today, Sweden's healthcare system faces additional challenges, including a shortage of healthcare workers, excessive bureaucracy, an ageing population, poor-quality treatment and limited patient choice (Ipsos, 2021). Health services are now transitioning towards a value-based organisation, which seeks to create value for patients while reducing costs. Value-based healthcare (VBHC) shifts the focus from the volume of services provided to the outcomes that matter to patients (Porter, 2008; Porter & Teisberg, 2006). Porter emphasised that value should be defined around the patient, with healthcare providers rewarded based on their ability to create value (Porter & Teisberg, 2004).

VBHC is centred on delivering better care at lower costs. Its key principles include creating value for patients, designing solutions to improve health outcomes, integrating care and measuring outcomes and costs (Porter & Lee, 2013). Researchers and policymakers are increasingly focusing on healthcare quality and outcomes (Organisation for Economic Co-operation and Development & World Health Organization, 2019; Papanicolas & Smith, 2012). Stowell and Akerman (2015) highlighted the importance of measuring outcomes, as they guide the direction of healthcare teams and serve as benchmarks for comparison and improvement.

VBHC reorganises healthcare delivery around patient needs. It contrasts with the fee-for-service model, which incentivises providers to perform as many services as possible. In contrast, VBHC rewards healthcare providers for helping patients improve their health, prevent chronic diseases and live healthier lives by fostering collaboration between hospitals and physicians. The overarching goal is to create more value for patients, improve patient safety and achieve cost efficiency (Porter & Teisberg, 2006).

Value-based Healthcare Concept

The primary goals of healthcare providers are to improve care quality and create a healthier society while reducing costs. As healthcare revolves around patients, services should be patient-centred rather than provider-centred. The concept of VBHC aims to reorganise healthcare to increase value (patient outcomes) effectively (Porter, 2010b). Many providers focus on increasing revenue and reducing costs, but this does not always lead to better patient outcomes. Improved outcomes mean fewer doctor visits and medical tests (Porter & Teisberg, 2007). The fee-for-service model, which reimburses providers based on the number of services rendered, encourages more treatments, prioritising quantity over quality. Efforts are now being made to link payment to the quality of care and value (Ray & Kusumoto, 2016).

VBHC was introduced to tie payments to patient value, emerging from cost-effectiveness principles rooted in health economics. Many providers globally are transitioning to VBHC (Engen et al., 2022). Over recent decades, it has been seen as a solution to help healthcare providers and policymakers improve care quality and reduce costs by focusing on patient outcomes (Porter, 2009). By adopting VBHC, providers can help keep patients healthier, which in turn lowers costs (Teisberg et al., 2020). VBHC is driving changes in how providers evaluate their performance and improve outcomes. Porter suggested that the healthcare pathway should be the starting point for determining added value, though the best way to measure value (outcomes) remains unclear.

Value in Value-based Healthcare

Defining the value that matters to patients is essential. Many physicians may believe that providing more services, such as additional visits, equates to better healthcare. However, good outcomes do not necessarily mean more visits or tests but rather reflect an improvement in the patient's health. Value is broadly defined as the health outcomes achieved per healthcare dollar spent (Porter & Teisberg, 2006). Value increases when health outcomes improve or costs decrease, focusing on enhancing care quality while reducing costs (Kaplan et al., 2014). VBHC, originating in the United States and now adopted globally, aims to improve the quality of care delivered by healthcare providers and enhance population health. Porter (2009) argued that maintaining good health is less costly than managing poor health. The primary goal of VBHC is to create more value for patients within the healthcare system.

Measure the Outcomes

VBHC focuses on outcomes rather than just price and cost. Measuring outcomes correctly is crucial, as value is reflected in the results achieved per dollar spent. Value cannot improve without accurate outcome measurement, which must be assessed throughout the entire care cycle, including aftercare (Porter & Teisberg, 2007). Tracking outcomes and costs at each treatment stage is essential, though measuring value can be challenging due to varying interpretations.

Porter and Lee (2013) proposed dividing outcomes into three tiers. Tier 1 involves health status, including mortality and functional status. Tier 2 relates to the care cycle and recovery, such as readmission rates and time to return to normal activities. Tier 3 focuses on the sustainability of health. Managing all tiers effectively can increase productivity and reduce costs.

VBHC is based on three core principles:

1. Value is the primary goal.
2. Medical practice should be organised around conditions and care cycles.
3. Results must be measured (Porter & Lee, 2013).

VBHC should not be confused with mere cost reduction, though it includes cost-efficiency aspects. Value should be defined around patients, with rewards for those who create it. It is measured by outcomes, not the volume of services (Porter, 2010a). VBHC shifts the reimbursement model from volume-based to value-based, rewarding healthcare providers through bundled payments that cover the entire care cycle, which may extend over months or years, depending on the condition.

The Six Components of Value-based Healthcare

VBHC benefits patients, healthcare providers, payers, suppliers and society (NEJM Catalyst, 2017). Implementing VBHC reduces healthcare costs while improving patient outcomes and satisfaction, leading to a healthier society and more efficient providers (NEJM Catalyst, 2017). The VBHC implementation model consists of six components (Porter & Lee, 2013), as shown in Figure 1.

Organise into Integrated Practice Units

The healthcare system is often structured around providers' expertise, not patient needs, causing fragmented care. Patients may experience delays, redundant tests and inefficiencies. VBHC organises care around patient conditions in integrated practice units (IPUs) (Porter & Lee, 2013). An IPU brings together all healthcare services required for a patient's condition, such as a cancer centre with radiotherapy, surgery and psychosocial services. IPUs lead to faster treatment, better outcomes and reduced costs. As providers specialise, they gain more expertise and can add further value, attracting more patients and improving efficiency.

Measure Outcomes and Costs for Every Patient

VBHC measures value by health outcomes per dollar spent (Porter, 2010a). Health outcomes are critical as they help decision-makers determine where to receive care and who should provide it. Furthermore, outcomes can also drive

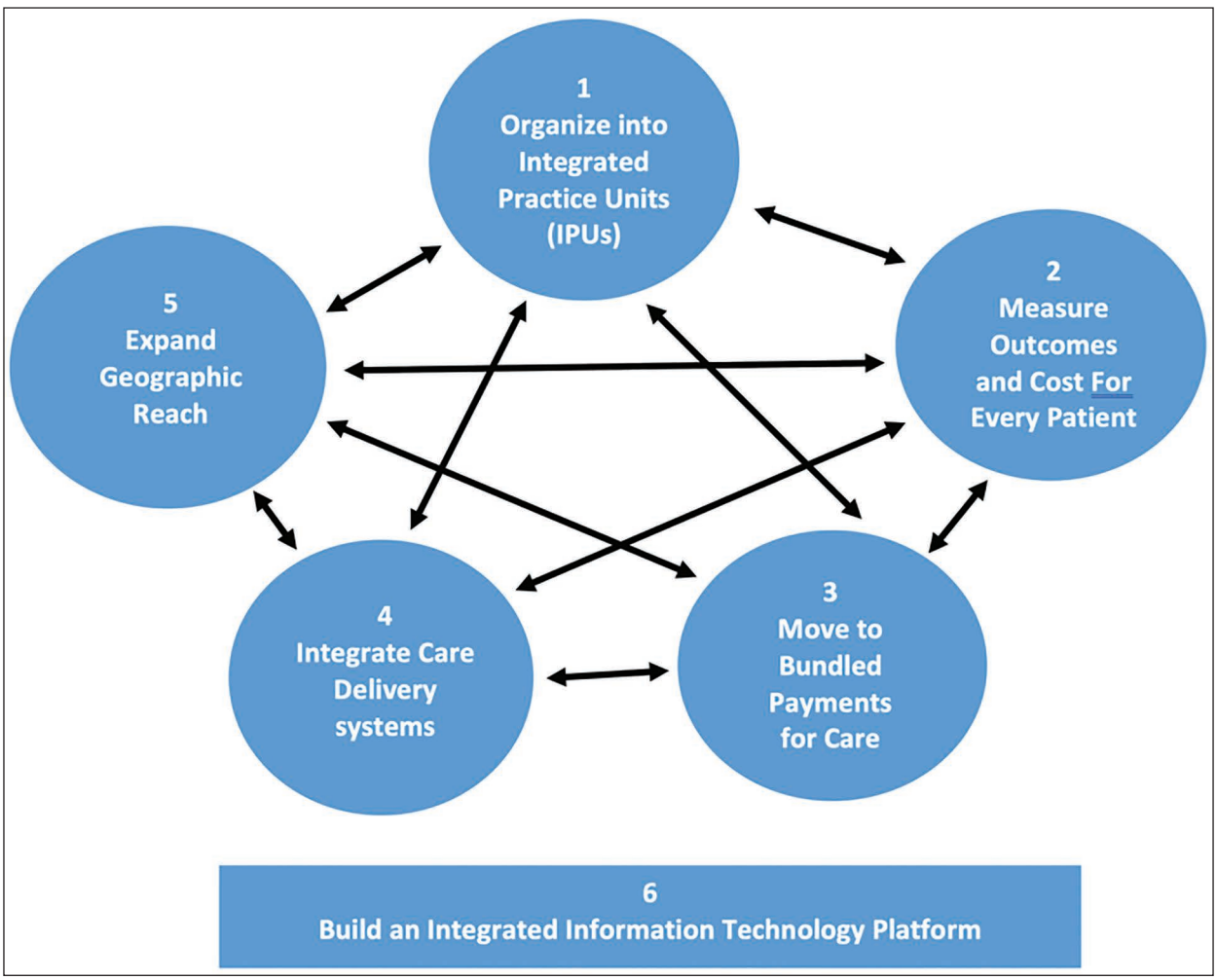

Figure 1. Six Components of the Value-based Healthcare (VBHC) Implementation Model (Porter, 2014).

quality improvement in healthcare. Current healthcare quality measurements often focus on processes, such as how well a hospital follows guidelines or general outcomes like 3-year survival rates. However, these measurements do not reflect the patient's quality of life during that period and thus cannot adequately represent true outcomes. Outcomes should be measured by medical condition, covering the entire care cycle and following up on the patient's health status after care concludes (Porter & Lee, 2013).

Porter (2010a) proposes that outcomes for any medical condition should be organised into a three-tier hierarchy. Tier 1 addresses health status achieved or retained. This includes measuring survival or mortality over a period appropriate to the medical condition and assessing how well organs function after treatment. Tier 2 focuses on the process of recovery, including data on readmissions, recovery time and complications. Tier 3 concerns the sustainability of health, measuring the degree of health maintained and the extent and timing of related recurrences or consequences. Figure 2 illustrates the hierarchy of outcome measures. Porter (2010a) also recommends that costs should be measured over the entire care cycle for the patient's medical condition, rather than simply considering the charges billed or collected.

Move to Bundled Payments for Care Cycles

The common payment models—fee-for-service and capitation—do not promote value creation. In the fee-for-service model, healthcare providers are reimbursed based on the number of services they provide (Rice, 2021). This makes each component of the healthcare system a cost and revenue centre, leading to overprovision, inefficiency and uncontrollable healthcare expenditures. Healthcare providers may perform unnecessary treatments on patients to increase reimbursement.

The capitation model can sometimes incentivise enrolling more patients than can realistically be cared for (Kinsey, 2018), which can result in longer waiting times. Additionally, the capitation model may motivate healthcare providers to minimise the cost per patient in order to maximise profits (Kinsey, 2018). As a result, neither model seems to create value for patients.

VBHC promotes bundled payments, which cover the entire care cycle and encourage collaboration among providers. All providers involved in a patient's treatment share the payment, aligning their goals to enhance patient value (Porter & Lee, 2013).

Integrate Care Delivery Systems

To eliminate fragmented care, VBHC promotes the integration of care systems. Providers must define the scope of services, concentrate volume in fewer locations, select appropriate service locations and integrate care across sites (Porter & Lee, 2013). When defining the scope of services, healthcare providers should only offer services they can effectively deliver. They should collaborate with other

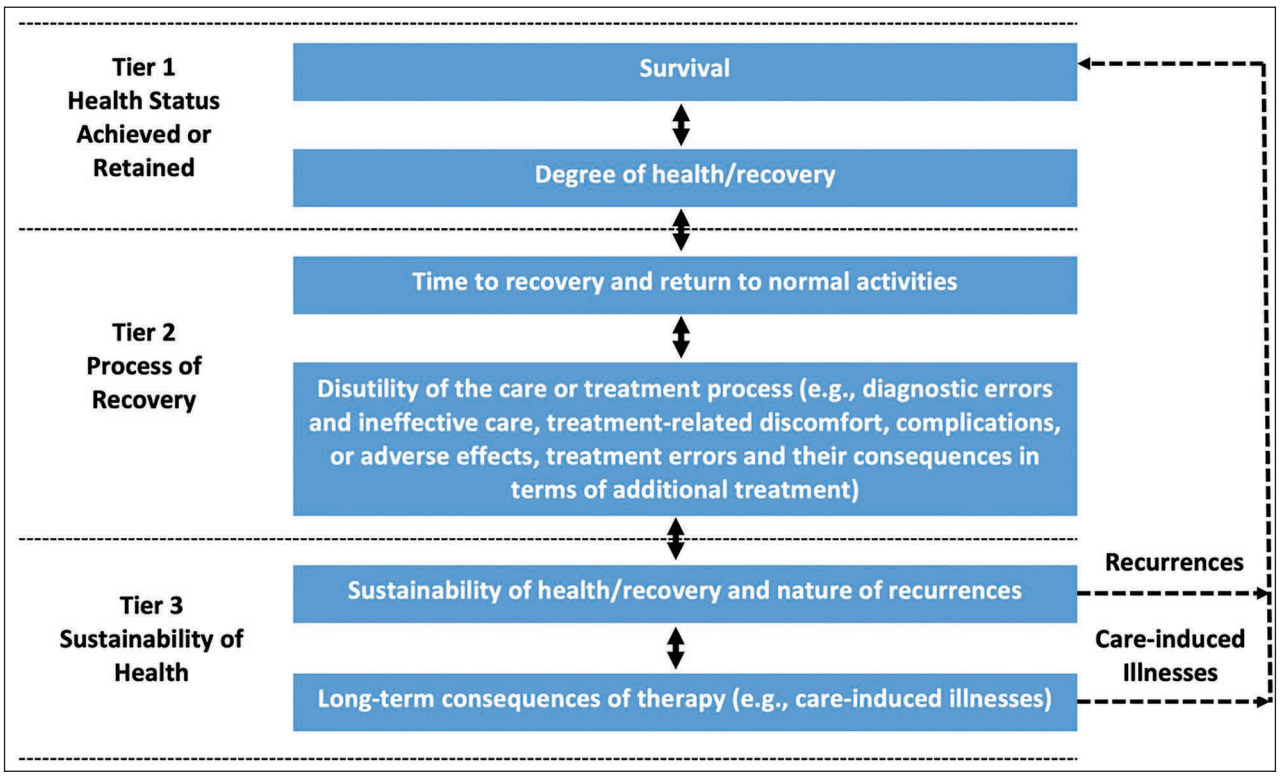

Figure 2. The Outcome Measures Hierarchy (Porter, 2010a).

providers to offer services they cannot effectively provide. For example, a hospital specialising in heart disease should focus only on heart disease care. Concentrating volume in fewer locations means that patients with the same medical condition are treated at the same place. Once healthcare providers have selected their area of expertise, specialising in treating specific conditions leads to better outcomes and reduced costs, ultimately increasing patient value.

Choosing the appropriate location for each service ensures that patients receive care where the value is highest. For example, less complex conditions should be treated at lower-cost care providers rather than medical school hospitals. This approach improves patient value by matching the necessary skills to the patients' needs, increasing healthcare staff utilisation and productivity. Healthcare providers allocate services across locations by integrating care across sites. For example, a patient may be diagnosed and undergo surgery at a specialised hospital, be rehabilitated at another hospital, and receive follow-up treatment at a nearby clinic.

Expand the Geographic Reach

Healthcare providers today primarily serve local populations. In VBHC, however, providers who specialise in a particular area are not limited to serving only their local community (Porter & Lee, 2013). Instead, they should expand their expertise to other regions by establishing an affiliate network. Physicians and nurses from the parent organisation can rotate to work in affiliated hospitals or networks. All hospitals within the affiliate network will use the same measurement systems to ensure consistency and quality of treatment.

Build an Integrated Information Technology System

Information technology (IT) has played a significant role in the healthcare industry. It is crucial to have the right tools to record patient data. Health IT refers to the systems healthcare providers use to manage patient data (Brooks, 2019). Health IT facilitates communication between healthcare providers and enables the collection, compilation and analysis of health data (Brook, 2020). The primary goal of health IT is to improve the overall health of the population while reducing healthcare costs. In VBHC, data on outcomes and healthcare costs are essential. As demonstrated, all the preceding five components are supported by the IT system. Therefore, having an effective IT system is crucial for enhancing the quality of care.

A Framework for Implementing Value-based Healthcare

Traditionally, healthcare providers are classified by specialty, requiring patients to move between providers for treatment. VBHC is a model where providers are compensated based on patient health outcomes (NEJM Catalyst, 2017). The goals of VBHC are to improve population health, increase patient satisfaction and reduce costs. It suggests that patients receive all necessary services from one provider in a single visit (Ramos, 2020). This shift from specialty-based care to organising around medical conditions will significantly improve patient outcomes (Porter & Teisberg, 2007).

Organising around medical conditions requires cooperation among healthcare providers, achieved through IPUs. An IPU combines all medical staff needed for the complete care cycle of a patient. Under VBHC, all services for a specific condition should be available at a few integrated locations via an affiliate network. Each provider in the network must define their scope of services to maximise value for patients (Porter & Lee, 2013).

Clearly defining services enables providers to treat more patients with a particular condition, improving expertise and creating more value. Matching the complexity of a condition with the right provider is key to optimising costs and productivity (Porter & Lee, 2013). Care should also be integrated across locations to enhance the patient experience. Implementing VBHC starts by identifying patient needs, followed by forming a dedicated healthcare team to address them. Team members can be spread across one or more providers in the network. The team measures health outcomes and costs for each patient, using data to improve care and efficiency. As outcomes improve, the network can expand to serve more patients.

The Swedish Healthcare System

According to Statistics Sweden (SCB), Sweden has a population of approximately 10.45 million, with immigrants representing 8.4% of the total population (Statistics Sweden, 2022). In 2021, Sweden's GDP per capita, based on purchasing power parity (PPP), was $59,324, ranking 5th in the European Union (World Bank, n.d.). Health expenditure in Sweden accounted for 10.87% of GDP in 2019 (World Bank, 2022a). In Sweden, all Swedish citizens and residence permit holders are entitled to medical and healthcare services provided by the state. Citizens of the European Union and some other contracting countries residing in Sweden are also eligible. Refugees, however, are only entitled to limited and emergency medical and healthcare services.

The Swedish healthcare system is primarily financed through taxes levied by county councils and municipalities (Anell et al., 2012). Responsibility for Swedish health and medical care is shared between the state or government, 21 regions and 290 municipalities. The objective of healthcare is to provide good care to the entire population on equal terms, with respect for the equal value of all individuals and the dignity of each person. Priority is given based on the need for health and medical care, and healthcare should work to prevent ill-health (Health and Medical Care Act).

The healthcare system provides medical services for the prevention, diagnosis and treatment of diseases and injuries, as well as ambulance services and care of the deceased (Sveriges Riksdag, 2017). Dental care is not covered under

this law (Dental Care Act 1985:125). This legislation regulates all care providers, with regions and municipalities serving as the principals responsible for healthcare delivery.

The state establishes principles and guidelines and implements the overall political agenda. This is managed through laws, regulations or agreements with the Swedish Association of Local Authorities and Regions (SALAR). Current agreements include, for example, shorter waiting times in cancer care, childbirth care and women's health, drug benefits and support for national quality registers.

All care providers, including state authorities, regions, municipalities, other legal entities or sole proprietors conducting healthcare activities may operate within the area of a principal. Healthcare encompasses both inpatient and outpatient primary care, which must be provided without restrictions concerning diseases, age or patient groups. Primary care offers essential medical treatment, such as nursing, preventive care and rehabilitation, that does not require the medical and technical resources of hospitals or other specialised skills.

Primary care is delivered through more than 1,000 health centres, district nursing clinics and general practitioners or family doctors. If a patient cannot receive the appropriate treatment or diagnosis at a health centre, a referral will be made to the relevant specialist doctor. There are over 20 regional hospitals, around 40 branches of regional hospitals and seven university hospitals. Regional hospitals have the expertise and medical equipment to cover most areas of disease. The branches of regional hospitals are smaller and may not always have all types of specialist clinics. These hospitals mainly provide inpatient care (sluten vård), although they also offer outpatient care (öppenvård) in many cases. University hospitals manage rare and complex diseases and injuries, working closely with medical universities and colleges on education and research. At least one of the seven university hospitals is located in each of the six healthcare regions.

In Sweden, healthcare services are provided by both public and private healthcare providers, and the same regulations apply to both (Socialstyrelsen, 2020). Public healthcare is organised by the county council, local authority or municipality (Socialstyrelsen, 2020). Private healthcare is divided into two types. The first type involves a private company providing healthcare services under a contract with the county council, local authority or municipality. In this case, the cost of care is the same for both private and public healthcare. The second type involves a private company providing healthcare services without contracts with the National Healthcare Services. In this instance, patients are responsible for covering the total cost of the care they receive (Socialstyrelsen, 2020).

In Sweden, each region sets its own patient fees (Socialstyrelsen, 2020), resulting in variations in fees across the country. However, there is a maximum amount a patient is required to pay for healthcare services. The high-cost protection system ensures that a patient pays a maximum of SEK 1,150 over a 12-month period for outpatient care, which also includes specialised treatments. A region can choose to set a lower high-cost limit than SEK 1,150.

High-cost protection usually does not apply to fees for hospitalisation (daily rates), vaccinations, certificates and health examinations, preventive care, missed appointments, log copy costs and administrative fees. In 2020, the high-cost protection for inpatient care was capped at SEK 100 per day. In most regions, healthcare is free for children and young people under the age of 20. Patients over the age of 85 are also exempt from outpatient care fees.

There is also high-cost protection for prescription drugs (Lag, 2021). For pharmaceuticals, high-cost protection ensures that a patient pays a maximum of SEK 2,300 over a 12-month period, as of 2020. Medicines included in the drug benefits scheme are free for children under 18.

Analysis (How to Integrate Value-based Healthcare into the Swedish Healthcare System)

The VBHC model was initially proposed by Porter (Harvard Business School, n.d.). VBHC is a healthcare delivery model that aims to improve health outcomes at a lower cost. The model incentivises healthcare providers to focus on the quality of care rather than the quantity. It links payments for healthcare delivery to the quality of care provided, encouraging the care team to prioritise patients' quality, safety and experience. Furthermore, VBHC avoids unnecessary diagnostics and treatments. Providing the right services supports the cost-effectiveness of healthcare delivery and ensures adherence to evidence-based clinical practice guidelines.

The fee-for-service model incentivises healthcare providers to increase the volume of services. A patient, or the patient's insurance company or government agency, is billed for every test, procedure and treatment the patient undergoes. Healthcare providers receive payment regardless of whether a treatment or procedure is successful. This model emphasises quantity over quality of care. The capitation model is a healthcare payment system in which providers receive a fixed amount per patient for a prescribed period (Kagan, 2022). This model incentivises providers to offer fewer services and spend less time per patient. As a result, healthcare providers may focus more on quantity than on the quality of care. VBHC seeks to avoid these issues by reorganising care delivery around the needs of patients, focusing on value rather than volume. This incentivises healthcare providers to collaborate in achieving the best possible health outcomes for patients.

Prerequisites and Suggestions for Implementing Value-based Healthcare in the Swedish Healthcare System

VBHC provides a methodology for measuring health outcomes and costs but does not offer a systematic approach for

implementing improvements. To introduce VBHC into the Swedish healthcare system, we first need to clearly define the concept of VBHC and identify relevant outcome measures. Standardised measurement of health outcomes is essential. Implementing registries is required to standardise health outcomes, as these registries are a crucial enabler for VBHC.

Sweden is fortunate, having made significant efforts over the past decades to develop a system of 'National Quality Registries (NQRS)' for collecting patient data. NQRS contain individualised data on patient conditions, medical interventions, and outcomes after treatment (National Quality Register, n.d.). These registries help healthcare providers identify treatment protocols that improve both efficiency and health outcomes.

Currently, there are over 100 NQRS in Sweden. NQRS are a key element in improving health outcomes and reducing costs. Data from NQRS can be used to track health outcomes and compare the performance of healthcare providers. As NQRS reflect the performance of healthcare providers, they will encourage providers to improve the quality of care.

Second, Sweden needs to implement bundled payments instead of relying on fee-for-service or capitation payments. The Swedish hospital reimbursement system is currently a mix of fee-for-service and capitation models (Glenngård, 2020). Bundled payments cover the total cost of services from the start to the end of treatment. This approach encourages healthcare providers to improve coordination and efficiency of care while enhancing quality and health outcomes at lower costs. For example, if a patient undergoes hip surgery, the reimbursement is paid to the healthcare providers as a bundled payment. Cataract surgery is one of the most common procedures in Sweden (Hugosson & Ekström, 2020), making it a suitable candidate for piloting bundled payments in the country.

Third, Sweden must improve coordination and collaboration among healthcare providers. The Swedish healthcare system is decentralised (Socialstyrelsen, 2020). Each county council, local authority or municipality manages its healthcare system independently. As a result, healthcare services vary between regions, making the transfer of patients from one county to another challenging. Integrated care delivery is essential for improving the quality of care. All stakeholders (county councils and municipalities) must collaborate more effectively and increase cooperation. Moreover, an affiliate network should be established among healthcare providers across the country. This would allow patients with the same medical conditions to receive treatment closer to home while maintaining the same standards as a parent hospital. Increased collaboration will reduce patient waiting times, as patients can receive the same standard of care at any hospital within the affiliate network, without waiting for treatment at a parent hospital.

Lastly, Sweden must implement a health information system (HIS). It would be impossible to implement VBHC effectively without a reliable IT system. HIS collects, stores and analyses a patient's electronic medical records. Using HIS makes sharing health information between healthcare providers more efficient and systematic. Patients receiving care from multiple healthcare providers will benefit from this seamless sharing of information. Moreover, HIS enhances patient treatment by collecting medical records, such as diagnosis reports, treatment information and examination results, enabling healthcare providers to offer better care. This results in improved quality of care. Additionally, the implementation of modern technologies, such as artificial intelligence (AI), telehealth and telemedicine, can further improve data sharing among healthcare providers.

Challenges and Conclusions

Global healthcare systems have faced concerns about being close to breaking point in recent years. Healthcare expenditure is increasing significantly due to the ageing population and the rising number of people with chronic conditions. Global healthcare spending is forecast to grow at an annual rate of 5.4% through 2028 (Minemyer, 2020). As a result, the international health community is striving to find strategies to increase the efficiency of care and reduce costs. VBHC is a strategy that emphasises quality-based care and patient outcomes, accompanied by a new reimbursement model that encourages healthcare providers to focus on delivering better care for patients.

Challenges of Implementing Value-based Healthcare

VBHC appears to be a win-win for healthcare providers and patients, offering many benefits. However, there are significant challenges to consider when implementing it in the Swedish healthcare system. First, VBHC lacks a systematic approach for guiding its implementation. While the concept offers a solution for improving health outcomes and reducing costs, it does not provide a clear structure for achieving these improvements. Therefore, before implementing VBHC, all stakeholders must create a roadmap for driving improvements. Stakeholders must also develop a framework to evaluate healthcare providers' performance, using measures such as mortality rates, care safety, patient experience, readmission rates and the effectiveness of care. Furthermore, healthcare providers need to establish clear definitions for health outcomes to ensure consistent and accurate measurement.

Second, VBHC relies on standardising patient data for diagnoses and treatments collected throughout the treatment process. In Sweden, the healthcare system is decentralised and managed by 21 independent county councils (Socialstyrelsen, 2020). Each healthcare provider has its own in-house system for storing medical records, evaluating the quality of care, and so on. This creates challenges when implementing strategies that promote coordination and the flow of patient information.

Furthermore, data transparency between healthcare providers is essential. All healthcare providers must agree that patient data can be accessed by multiple providers and shared across systems to ensure seamless care.

Third, the reimbursement structure of VBHC rewards healthcare providers based on the quality of care they deliver to patients. One of the most significant barriers to implementing VBHC in the Swedish healthcare system is shifting reimbursement models from fee-for-service and capitation models to bundled payment models. Bundled payments may face challenges in Sweden due to the low level of coordination among healthcare providers across the country (Wadmann et al., 2009). Bundled payments require a robust regulatory framework, standardised patient data and other prerequisites to evaluate the quality of care effectively. Therefore, bundled payments will not function properly if Sweden cannot meet these prerequisites.

Lastly, embedding VBHC into the healthcare system requires transparency and strong collaboration between healthcare providers. The IT system is a key factor in building strong relationships between providers. Accurate and consistent data are crucial for implementing VBHC, as they are used to evaluate and compare the quality of care among healthcare providers. As mentioned earlier, each region manages its own healthcare services, often using different HISs. This makes the integration of HISs more complicated. Integrating HISs requires extra care to avoid generating incorrect data, which could lead to inaccurate evaluations of healthcare providers' performance. Furthermore, most patient data are now stored electronically, which may increase administrative workloads and necessitate specialised staff training.

Conclusions

The rise in healthcare costs has been a concern in most developed countries as people live longer. VBHC aims to create more patient value and increase cooperation among healthcare providers while reducing costs. Long waiting times are one of the key issues in the Swedish healthcare system (The Business Times, 2018). Patients often need to wait many months before receiving treatment or undergoing surgery. The Swedish healthcare system is decentralised (Socialstyrelsen, 2020), with regional councils operating independently. This often leads to a lack of cooperation, causing problems for patients who require care from multiple providers.

Additionally, the fee-for-service and capitation payment models do not incentivise healthcare providers to improve the quality of care. VBHC can serve as a catalyst for improving healthcare processes, quality measurement and patient health outcomes. The VBHC framework suggests that the healthcare system should transition from volume-driven care to value-driven care. To implement VBHC successfully, all stakeholders, including local governments and healthcare providers, must communicate, collaborate and work together to identify, collect and create treatment guidelines that provide better and more effective care. Shifting from the current payment models to bundled payments will encourage healthcare providers to offer better care and drive cost efficiencies.

VBHC emphasises the need for an integrated IT system that allows interoperability and the exchange of data. Over the past decade, Sweden has attempted to implement VBHC into its healthcare system (Nilsson et al., 2017; Øvretveit et al., 2012). To implement VBHC successfully, prerequisites such as standardising the measurement of health outcomes, implementing bundled payments, increasing coordination and collaboration among healthcare providers and establishing an HIS must be met. Moreover, new technologies such as AI and blockchain can enhance patient data management, improve security and aid decision-making, helping to ensure the smooth implementation of VBHC in Sweden.

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ORCID iDs

Cholada Kittipittayakorn https://orcid.org/0000-0003-4620-7472
A.M.M. Shahiduzzaman Quoreshi https://orcid.org/0000-0002-7277-9151

References

Anell, A. (2005). Swedish healthcare under pressure. *Health Economics*, *14*(S1), S237–S254. https://doi.org/10.1002/hec.1039

Anell, A., Glenngård, A. H., & Merkur, S. (2012). *Sweden: Health system review*. World Health Organization. https://apps.who.int/iris/handle/10665/330318

Baumann, A. (2021). Health reforms should focus on improving services and systems, not just containing costs. *International Journal of Public Health*, *66*, 1604332. https://doi.org/10.3389/ijph.2021.1604332

Braithwaite, J., Matsuyama, Y., & Johnson, J. (2017). *Healthcare reform, quality and safety: Perspectives, participants, partnerships and prospects in 30 countries*. CRC Press.

Brook, C. (2020, December 1). *What is a health information system?* Digital Guardian. https://digitalguardian.com/blog/what-health-information-system

Brooks, A. (2019). *What Is the health information technology? Exploring the cutting edge of our healthcare system*. Rasmussen University. https://www.rasmussen.edu/degrees/health-sciences/blog/what-is-health-information-technology/

Engen, V. V., Bonfrer, I., Ahaus, K., & Buljac-Samardzic, M. (2022). Value-based healthcare from the perspective of the healthcare professional: A systematic literature review. *Frontiers in Public Health*, *9*. https://www.frontiersin.org/articles/10.3389/fpubh.2021.800702

Fiscella, K. (2011). Health care reform and equity: Promise, pitfalls, and prescriptions. *Annals of Family Medicine*, *9*(1), 78–84. https://doi.org/10.1370/afm.1213

Glenngård, A. H. (2020, June 5). *Sweden*. https://www.commonwealthfund.org/international-health-policy-center/countries/sweden

Hanning, M. (1996). Maximum waiting-time guarantee—An attempt to reduce waiting lists in Sweden. *Health Policy*, *36*(1), 17–35. https://doi.org/10.1016/0168-8510(95)00791-1

Harvard Business School. (n.d.). *Value-based health care*. https://www.isc.hbs.edu/health-care/value-based-health-care/Pages/default.aspx

Hugosson, M., & Ekström, C. (2020). Prevalence and risk factors for age-related cataract in Sweden. *Upsala Journal of Medical Sciences*, *125*(4), 311–315. https://doi.org/10.1080/03009734.2020.1802375

Immergut, E. M., Anderson, K. M., Devitt, C., & Popic, T. (2021). *Health politics in Europe: A handbook*. Oxford University Press.

Ipsos. (2021). *Global health service monitor 2021*.

Jones, K. (2020, February 12). *These countries are aging the fastest—Here's what it will mean*. World Economic Forum. https://www.weforum.org/agenda/2020/02/ageing-global-population

Kagan, J. (2022, March 7). *Understanding capitation payments: How they work and impact healthcare*. Investopedia. https://www.investopedia.com/terms/c/capitation-payments.asp

Kaplan, R. S., Witkowski, M., Abbott, M., Guzman, A. B., Higgins, L. D., Meara, J. G., Padden, E., Shah, A. S., Waters, P., Weidemeier, M., Wertheimer, S., & Feeley, T. W. (2014). Using time-driven activity-based costing to identify value improvement opportunities in healthcare. *Journal of Healthcare Management*, *59*(6), 399–412.

Kinsey, A. (2018, November 2). *Advantages & disadvantages of capitation payments*. Bizfluent. https://bizfluent.com/info-12185015-advantages-disadvantages-capitation-payments.html

Lag. (2021, January 4). *Act (2002:160) on pharmaceutical benefits etc*. https://lagen.nu/2002:160

McIntyre, D., & Chow, C. K. (2020). Waiting time as an indicator for health services under strain: A narrative review. *Inquiry: A Journal of Medical Care Organization, Provision and Financing*, *57*, 0046958020910305. https://doi.org/10.1177/0046958020910305

Meng, Q., Mills, A., Wang, L., & Han, Q. (2019). What can we learn from China's health system reform? *BMJ*, l2349. https://doi.org/10.1136/bmj.l2349

Minemyer, P. (2020, March 24). *Health spending is likely to grow by 5.4% per year through 2028. Here's why*. Fierce Healthcare. https://www.fiercehealthcare.com/payer/cms-actuaries-say-health-spending-likely-to-grow-by-5-4-per-year-through-2028-here-s-why

National Quality Register. (n.d.). *National quality register*. https://skr.se/kvalitetsregister.32864.html

NEJM Catalyst. (2017, January 1). *What is value-based healthcare?* https://catalyst.nejm.org/doi/full/10.1056/CAT.17.0558

Nilsson, K., Bååthe, F., Erichsen Andersson, A., & Sandoff, M. (2017). The need to succeed – learning experiences resulting from the implementation of value-based healthcare. *Leadership in Health Services*, *31*(1), 2–16. https://doi.org/10.1108/LHS-08-2016-0039

Organisation for Economic Co-operation and Development & World Health Organization. (2019). *Improving healthcare quality in Europe: Characteristics, effectiveness and implementation of different strategies*. https://doi.org/10.1787/b11a6e8f-en

Organisation for Economic Co-operation and Development & European Union. (2020). *Health at a glance: Europe 2020—State of health in the EU cycle*.

Øvretveit, J., Andreen-Sachs, M., Carlsson, J., Gustafsson, H., Hansson, J., Keller, C., Lofgren, S., Mazzocato, P., Tolf, S., & Brommels, M. (2012). Implementing organisation and management innovations in Swedish healthcare: Lessons from a comparison of 12 cases. *Journal of Health Organization and Management*, *26*(2), 237–257. https://doi.org/10.1108/14777261211230790

Papanicolas, I., & Smith, P. C. (Eds.). (2012). Health system performance comparison: An agenda for policy, information and research. Open University Press.

Porter, M. E. (2008). Value-based health care delivery. *Annals of Surgery*, *248*(4), 503–509. https://doi.org/10.1097/SLA.0b013e31818a43af

Porter, M. E. (2009). A strategy for health care reform—Toward a value-based system. *New England Journal of Medicine*, *361*(2), 109–112. https://doi.org/10.1056/NEJMp0904131

Porter, M. E. (2010a). Measuring health outcomes: The outcomes hierarchy [Supplementary Appendix 2]. *The New England Journal of Medicine*, *363*(26). https://doi.org/10.1056/NEJMp1011024

Porter, M. E. (2010b). What is value in health care? *The New England Journal of Medicine*, *363*(26), 2477–2481. https://doi.org/10.1056/NEJMp1011024

Porter, M. E. (2014, January 15). *Value-based health care delivery*. Harvard Business School. https://www.hbs.edu/ris/Publication%20Files/3_13615129-eeec-4987-bf1a-1261ff86ae69.pdf

Porter, M. E., & Lee, T. H. (2013, October 1). The strategy that will fix health care. *Harvard Business Review*. https://hbr.org/2013/10/the-strategy-that-will-fix-health-care

Porter, M. E., & Teisberg, E. (2004, June 1). Redefining competition in health care. *Harvard Business Review*. https://hbr.org/2004/06/redefining-competition-in-health-care

Porter, M. E., & Teisberg, E. O. (2006). *Redefining health care: Creating value-based competition on results*. Harvard Business School. https://www.hbs.edu/faculty/Pages/item.aspx?num=21319

Porter, M. E., & Teisberg, E. O. (2007). How physicians can change the future of health care. *JAMA*, *297*(10), 1103–1111. https://doi.org/10.1001/jama.297.10.1103

Ramos, P. R. (2020). Value-based healthcare. In T. F. Heston & S. Ray (Eds.), *Bioethics in medicine and society*. IntechOpen. https://doi.org/10.5772/intechopen.93378

Ray, J. C., & Kusumoto, F. (2016). The transition to value-based care. *Journal of Interventional Cardiac Electrophysiology*, *47*(1), 61–68. https://doi.org/10.1007/s10840-016-0166-x

Rechel, B., & McKee, M. (2009). Health reform in central and eastern Europe and the former Soviet Union. *The Lancet*, *374*(9696), 1186–1195. https://doi.org/10.1016/S0140-6736(09)61334-9

Rice, T. (2021). *Health insurance systems: An international comparison*. Academic Press. https://doi.org/10.1016/B978-0-12-816072-5.09997-1

Socialstyrelsen. (2020, September 1). *About the Swedish healthcare system*. https://www.socialstyrelsen.se/en/about-us/healthcare-for-visitors-to-sweden/about-the-swedish-healthcare-system/

Statistics Sweden. (2022, February 22). *Summary of population statistics 1960–2021*. https://www.scb.se/en/finding-statistics/statistics-by-subject-area/population/population-composition/population-statistics/pong/tables-and-graphs/yearly-statistics–the-whole-country/summary-of-population-statistics/

Stowell, C., & Akerman, C. (2015, October 23). Measuring outcomes: The key to value-based health care. *Harvard Business Review*. https://hbr.org/webinar/2015/11/measuring-outcomes-the-key-to-value-based-health-care

Sveriges Riksdag. (2017, February 9). *Hälso- och sjukvårdslag (2017:30)*. https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/halso–och-sjukvardslag_sfs-2017-30

Teisberg, E., Wallace, S., & O'Hara, S. (2020). Defining and implementing value-based health care: A strategic framework. *Academic Medicine*, *95*(5), 682–685. https://doi.org/10.1097/ACM.0000000000003122

The Business Times. (2018, September 4). *Swedes face problems with health care system*. https://www.businesstimes.com.sg/consumer/swedes-face-problems-with-health-care-system

The Commonwealth Fund. (2010, November 18). *Commonwealth fund international health policy survey*. https://www.commonwealthfund.org/publications/surveys/2010/nov/2010-commonwealth-fund-international-health-policy-survey

Tynkkynen, L.-K., Pulkki, J., Tervonen-Gonçalves, L., Schön, P., Burström, B., & Keskimäki, I. (2022). Health system reforms and the needs of the ageing population—An analysis of recent policy paths and reform trends in Finland and Sweden. *European Journal of Ageing*, *19*(2), 221–232. https://doi.org/10.1007/s10433-022-00699-x

United Nations, Department of Economic and Social Affairs, Population Division. (2017). *World population ageing 2017: Highlights*. https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2017_Highlights.pdf

Wadmann, S., Strandberg-Larsen, M., & Vrangbæk, K. (2009). Coordination between primary and secondary healthcare in Denmark and Sweden. *International Journal of Integrated Care*, *9*(1), 1. https://doi.org/10.5334/ijic.302

World Bank. (n.d.). *GDP per capita, PPP (current international $)—European Union*. https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=EU&name_desc=false

World Bank. (2022a, January 30). *Current health expenditure (% of GDP)—Sweden*. https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?locations=SE

World Bank. (2022b, January 30). *Current health expenditure (% of GDP)*. https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS