

VALUE-BASED HEALTHCARE IN SWEDEN

Reaching the next level



Commissioned by



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List of abbreviations

AI: artificial intelligence

EHR: electronic health record

EUnetHTA: European Network for Health Technology Assessment

NQR: Swedish national healthcare quality registry

RWD: real-world data

RWE: real-world evidence

SALAR: Swedish Association of Local Authorities and Regions

TLV: Tandvårds-Och Läkemedelsförmånsverket (Dental and Pharmaceutical Benefits Agency)

VBHC: value-based healthcare

VBP: value-based payment

About this report

Value-based healthcare in Sweden: Reaching the next level is an Economist Intelligence Unit report, commissioned by Takeda. It looks at Sweden's progress on implementing the principles of value-based healthcare (VBHC) throughout the country and care pathways.

The findings of the report are based on desk research and ten in-depth interviews with experts on VBHC in Sweden, including health economists, healthcare providers and policymakers. Our thanks are due to the following for their time and insights (listed alphabetically):

- Karin Göransson, policy analyst, Swedish Association of Local Authorities and Regions (SALAR)
- Peter Graf, CEO, Tiohundra
- Niklas Hedberg, chief pharmacist, Dental and Pharmaceutical Benefits Agency/Tandvårds-Och Läkemedelsförmånsverket (TLV); and chair of the executive board, European HTA Network (EUnetHTA)
- Morten Kildal, consultant plastic surgeon, head of value-based healthcare and associate professor, Uppsala University Hospital
- Peter Lindgren, managing director, Swedish Institute for Health Economics
- Tobias Nilsson, chief of strategy, Västra Götaland healthcare region
- Jörgen Nordenström, emeritus professor of surgery, and freelance consultant in healthcare quality improvement projects, VBMCare.com
- Fredrik Öhrn, senior innovation manager, Karolinska University Hospital
- Johan Thor, associate professor, Jönköping Academy for Improvement of Health and Welfare
- Fredrik Westander, senior policy analyst, SALAR
- Jonas Wohlin, founder, Ivbar

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Executive summary

The need to get better value from healthcare investment has never been more important as ageing populations and increasing numbers of people with multiple chronic conditions force governments to make limited financial resources go further.

These pressures, along with a greater focus on patient-centred care, have raised the profile of value-based healthcare (VBHC), especially in European healthcare systems. Sweden, with its highly comprehensive and egalitarian healthcare system, has been a leader in implementing VBHC from the beginning, a fact that was underscored in a 2016 global assessment of VBHC published by The Economist Intelligence Unit.¹

This paper looks at the ways in which Sweden has implemented VBHC, the areas in which it has faced obstacles and the lessons that it can teach other countries and health systems looking to improve the value of their own healthcare investments.

Key findings

Defining VBHC is still a challenge. Finding a single definition of VBHC, let alone a policy that can command widespread support, has been a challenge in Sweden, as elsewhere. The country has been a pioneer in experimentation with organisational restructuring designed to improve efficiency and patient satisfaction. There have also been some efforts to link remuneration of healthcare providers and reimbursement of medicines to outcomes. Yet, although there is little disagreement that more successful outcomes for patients and doctors alike should be a key priority, there is significant disagreement on the steps needed to get to that point.

Integrated care delivery is a key part of providing value. Policies that lead to greater integration of healthcare pathways and closer co-ordination of care between different stakeholders (and payors) in the Swedish system have been welcomed by patients. In some notable cases, such as through the closer co-ordination of home care between hospitals and community care agencies, these policies have made healthcare delivery more efficient.

Getting buy-in from health providers is vital. The most successful experiments with VBHC in the Swedish system, including initiatives in Uppsala, the Västra Götaland region and Stockholm County, so far have been done gradually, with close consultation with healthcare providers,

¹ The Economist Intelligence Unit, *The enabling environment for value-based healthcare*, <http://vbhcglobalassessment.eiu.com/>

patients and other stakeholders. Other, more radical attempts at reform have met with criticism, which has undermined support for them. Achieving “buy-in” from those charged with implementing new policies, and those they are meant to benefit, is critical.

Good data are key to effective value-based pricing. Accurate and comprehensive health data are a major part of VBHC in that they enable policymakers to measure the impact of treatment, evaluate where both care and processes can be improved, and ultimately provide the information that can underpin value-based pricing. Sweden has benefited immensely from its long history of quality registers for a variety of diseases, including hip arthroplasty and cardiac care. Yet the quality and coverage of these registries are uneven. More consistent gathering of data, as well as more efficient integration of information from registries with that collected in electronic health records, could help to underpin efforts to extend value-based pricing.

VBHC is not always “one size fits all”. Although there have been some efforts to pilot VBHC experiments in multiple regions of Sweden, the country’s decentralised healthcare structure means that there is unlikely to be a comprehensive national VBHC policy imposed from the centre. At the same time, there are numerous instances of co-operation between regions and national working groups dedicated to making it easier to share information about best practices. These include a platform between the country’s health ministry and seven county councils to monitor value in healthcare and reimbursement, and more recent efforts to come up with a common infrastructure for using registry data.

Introduction

Sweden has long been a global leader in value-based healthcare (VBHC), helped by its highly developed system of disease registries, outcome-based reimbursement for some specialised care and a decentralised health system that helps to encourage experimentation at the local level.

Delivery of healthcare is the responsibility of Sweden's 21 regions, creating a range of opportunities for local authorities to pilot reforms within a smaller population before looking to scale them up.

Yet advocates for greater organisational change to support these measures have faced increasing criticism in recent years, driven in part by the fragmented and uneven degree to which these changes have been pursued. As a result, public and clinical perceptions of VBHC have been somewhat tarnished.

"If you are talking about registering outcomes data, there has been investment from national funds in building better infrastructure," says Peter Lindgren, managing director of the Swedish Institute for Health Economics. "If you are talking about organisational principles, there is quite a bit of a backlash at the moment."

Sweden provides a number of examples of how value-based propositions can be implemented successfully, as well as lessons on how to better engage stakeholders in the process.

This report will first look at what Sweden does well and what other countries can learn from Sweden's experience with VBHC. The second chapter will then highlight some of the challenges the country has faced in implementing VBHC. Chapter 3 will look at how to overcome the limitations and examine some of the potential steps forward.

Chapter 1: The Swedish model and lessons for others

Part of the difficulty in assessing the success of countries at implementing VBHC is agreeing on a definition in the first place.

The concept of VBHC delivery originated with Harvard University Professor Michael Porter, who envisioned it as a structure for rebuilding global healthcare systems “with the overarching goal of value for patients—not access, cost containment, convenience, or customer service”. The formula for assessing value is patient health outcomes per dollar spent.²

In this understanding, only an evaluation of the ways in which a specific health intervention, treatment or entire care pathway clearly benefits patients and contributes to better outcomes can determine their value. From a cost perspective, meanwhile, employing all of the elements that make up VBHC—better data, processes and care—leads to better outcomes that create value.

Yet, in Sweden, as elsewhere, there are a number of components that contribute to patient outcomes and value that are important to understand and go beyond costs. Access to high-quality data is one element that is crucial to evaluating value in healthcare, and Sweden’s pioneering quality health registries and digital health records provide significant opportunities to compile and share real-world evidence (RWE) about health outcomes. Integration and use of those data could offer future benefits in the form of improved diagnosis, therapy and health

process design. Better adaptation of process and health pathways is another element that could lead to greater progress on detecting and treating serious health conditions.

Finally, in some cases, payment systems themselves are being altered to reflect these priorities, with Sweden and the UK leading the way in Europe. In contrast with the UK, however, where value-based payments (VBPs) are being piloted on a national level, in Sweden’s decentralised system they are largely regional agreements with county councils. In addition, most are still focused on efforts to connect health provider remuneration to patient outcomes. This difference, and the fact that connection of VBP systems to Sweden’s disease registries is still a work in progress, makes it more challenging to expand the use of VBPs around the country.

Over the past decade, a number of European countries have implemented a variety of value-based measures in their healthcare delivery, and Sweden has arguably been one of the continent’s leaders in this process, as highlighted by The Economist Intelligence Unit’s 2016 global assessment of VBHC.³

Sweden has long had one of the most progressive healthcare systems in Europe, underpinned by its social democratic traditions and explicit protection of egalitarianism in the legislation supporting healthcare. Yet the country faces many of the same problems as other developed

² Harvard Business School, Value-Based Health Care Delivery, <https://www.isc.hbs.edu/health-care/vbhcd/Pages/default.aspx>

³ The Economist Intelligence Unit, *The enabling environment for value-based healthcare*, <http://vbhcglobalassessment.eiu.com/>

economies—an ageing population, growing numbers of people with chronic medical conditions and limited budgets—all of which are putting stress on its healthcare system.

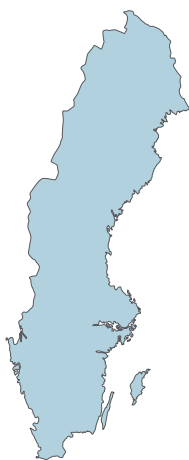
Sweden’s 21 regions are responsible for providing and paying for most healthcare delivery, with costs financed primarily through taxation at the county level. As a result, experimentation has been primarily at the regional, and even local, level.

“The regions are free to organise the delivery of healthcare within the bounds of the law”, says Mr Lindgren. “Otherwise, there is a free mandate as to whether to provide it themselves or to rely upon private providers. If we talk about organising healthcare along value-based lines, there is nothing at the national level.”

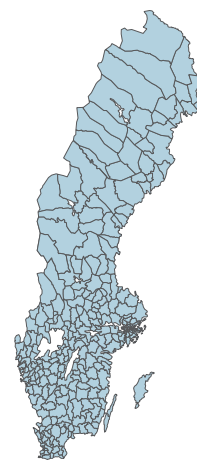
Health registries, evidence-based treatment guidelines and digitalisation

Sweden’s healthcare system is unique in its long tradition of being able to access data from a wide range of quality-based health registries, some of which have been collecting data for more than 20 years. The registries provide quality indicators designed both to enable further improvement and to allow for the evaluation of healthcare delivery. The registries have their own publications but also post data on the main website of the Swedish Association of Local Authorities and Regions (SALAR) for publicly presented health quality indicators, Vården i siffror (healthcare in numbers). Close to 50 of Sweden’s 100 national quality registries currently provide data to the website, according to Karin Göransson, a policy analyst at SALAR.

Decentralised Sweden



21
County councils



290
Municipalities

Source: Ministry of Health and Social Affairs Sweden.

Policymakers are hoping to use the registries to underpin more evidence-based treatment and real-time medical research. Yet levels of coverage of the registries vary by medical speciality, according to Mr Lindgren.



In Sweden, the national quality registries give a unique possibility to achieve the goal of equal care and treatment.”

Karin Göransson, policy analyst, SALAR

Sweden’s ability to track its population and compile a few hundred national quality registries helped make it attractive to Harvard University’s Mr Porter, says Jörgen Nordenström, emeritus professor of surgery, and freelance consultant in healthcare quality improvement projects at VBMCare.com. But, he notes that the process of updating registries is time-consuming for doctors, and there are too many assumptions that the available information will automatically help units with poor ratings to improve their performance.

“Professions set up the registries in different disease areas to measure quality, and there

is no requirement to have these registries,” he adds. “They have different coverage and degrees of acceptance; they are very good in the areas of cardiology and hip replacement, and in other areas cover just a fraction of care.”

Nevertheless, the existence of the registries is already influencing clinical approaches outside Sweden, with the country’s hip arthroplasty registry helping to define international best practice.⁴

Against this backdrop of vast data availability, digitalisation in Swedish healthcare is advancing. The Swedish government and SALAR recently launched a joint vision for digitalisation in health.⁵ With its disease registries, electronic records and plenty of real-world data (RWD), Sweden has been labelled a “data gold mine” for healthcare;⁶ the potential for further development of the use of predictive analytics, machine learning and applications for artificial intelligence (AI) is enormous.

“In Sweden, the national quality registries give a unique possibility to achieve the goal of equal care and treatment,” says Ms Göransson. “They provide knowledge of how healthcare works and can be improved. These registries, together with the traditional health data registries, have helped save many lives and improve healthcare in Sweden.”

⁴ “Swedish National Quality Registries and their Contribution to the Best Possible Care for Patients,” presentation by Thor, J., et al to the International Forum on Quality & Safety in Healthcare, Gothenburg, April 15th 2016, p. 32, http://aws-cdn.internationalforum.bmj.com/pdfs/2016_G2.pdf

⁵ Government Offices of Sweden and SALAR, *Vision for eHealth 2025 – common starting points for digitisation of social services and health care*, March 2016, <https://ehalsa2025.se/wp-content/uploads/2018/03/Handlingsplan-e-h%C3%A4lsa-engelsk-version.pdf>

⁶ Webster, P. C., “Sweden’s health data goldmine”, *CMAJ*, 2014 Jun 10; 186(9): E310.

Another project, Primary Care Quality Sweden, seeks to improve co-ordination on the primary care level. The project is a quality improvement system comprising around 150 quality measures and technical methods for collecting data automatically, so healthcare providers do not need to spend time compiling additional documentation, and making it available at both the local and national levels.⁷ The data are real-time, evidence-based and updated annually. It covers primary care-specific indicators such as comorbidities, lifestyle habits and pharmaceutical treatment, diagnosis-specific indicators for 12 categories of conditions commonly seen in primary care, as well as patient-reported data.⁸

The system currently covers half of Sweden's 1,200 health centres and can answer questions such as what proportion of patients with atrial fibrillation are not treated with anticoagulants and which patients with chronic disease have not had a check-up within the past 18 months.⁹

Value-based pricing

Meanwhile, value-based pricing models are also progressing in Sweden. Value-based pricing for pharmaceuticals and medical devices has been in operation since 2002 in some regions of Sweden, those interviewed say. Sweden, together with the UK, was one of the first countries to adopt value-based pricing as a decision-making framework, but it

has developed different ways of approaching the problem. The country is already using bundled payment systems in different regions, where health providers are paid for a complete episode of care lasting for a year or longer, giving the provider full responsibility for the care cycle, including complications. This package price is adjusted based on the preconditions of the patients and expected cost for each, based on demographic factors.

Different payment models are also being applied in the primary care sector. Payments are generally based on capitation for registered patients, based on an estimated "illness burden" as well as some fee-for-service and performance-based payments.¹⁰ In addition, 15 of Sweden's 21 county councils have put in place risk-adjusted capitation based on the country's Care Need Index (according to research published in 2018), which increases capitation payments to primary-care centres with a large number of patients with "unfavourable socioeconomic or demographic characteristics".¹¹

In both Stockholm (the capital region) and some parts of western Sweden, there have been experiments in reimbursing health providers for so-called bundled care, an entire episode of care in which remuneration is based in part on outcomes. Stockholm County has introduced bundled care programmes for spinal surgery and hip replacements (see the case study on the next page). Meanwhile, in

⁷ Swedish Association of Local Authorities and Regions, Primary Care Quality Sweden, <https://skl.se/tjanster/englishpages/activities/primarycarequality.10073.html>

⁸ Elmroth, U., *Primary Care Quality Sweden: Made by primary care, for primary care*, presentation to Amsterdam International Forum on Quality and Safety in Healthcare, May 2nd-4th 2018, https://www.nfgp.org/files/29/nfgp_august_2018_presentation_sweden_1_of_2_.pdf

⁹ Ibid.

¹⁰ European Forum for Primary Care, Primary Care in Sweden, <http://www.euprimarycare.org/column/primary-care-sweden>

¹¹ Anell, A., et al., "Does risk-adjusted payment influence primary care providers' decision on where to set up practices", *BMC Health Services Research*, 2018 Mar 14;18(1):179.

Case Study: OrthoChoice

OrthoChoice was one of the earliest examples of a bundled payment system in Sweden, in which healthcare providers receive reimbursement based on outcomes and undergo close health monitoring of healthcare delivery introduced in Sweden. Launched in all major hospitals and three private specialised orthopaedic centres in Stockholm County in 2009, OrthoChoice involved knee and hip replacement surgery, and was ultimately extended to spinal surgery.

Under the terms of the programme, a small portion of the bundled payment, around 3.2%, is withheld and paid retroactively only if the provider meets previously agreed outcome goals. By 2011, complications and revisions had declined by around 20% compared with a control group using traditional reimbursement plans, and the county's total cost per patient also declined.¹²

In 2013 the OrthoChoice model was extended to spinal surgery, with a much higher outcomes-based payment of 10%.¹³

A number of other regions in Sweden have adopted similar agreements for bundled payments with a value component for discrete procedures, such as hip and knee replacements and bariatric surgery. Agreements are based on achievement and the extent to which patients were satisfied a few months, or one year, after their operation. In the case of spinal surgery, these measurements focus on pain reduction, as this is the principal reason for surgery.

"Initially, there were higher expectations, with most people positive toward changing from production-based reimbursement to something that had to do with outcomes and patient values," says Jörgen Nordenström, emeritus professor of surgery, and freelance consultant in healthcare quality improvement projects at VBMCare.com.

Ultimately, he adds, the programme has been considered successful, with analysts concluding that complication rates and costs fell as a result.

western Sweden, health providers are running a trial for the same two procedures, as well as for bariatric surgery, with 10% of total payments based on health outcomes.¹⁴

"Most partners would agree that [value-based pricing] is not the only tool you need in your

toolbox, but it's a usable framework," said Niklas Hedberg, chief pharmacist at Sweden's Dental and Pharmaceutical Benefits Agency Tandvårds-Och Läkemedelsförmånsverket (TLV) and chair of the European Health Technology Assessment Network (EUnetHTA). "When it comes to VBHC, I think it remains

¹² Clawson, J., et al., "Competing on Outcomes: Winning Strategies for Value-Based Healthcare", Boston Consulting Group, January 2014.

¹³ Ibid.

¹⁴ OECD Expert Group Meeting on Payment Systems, *SVEUS – National collaboration for value-based reimbursement and monitoring of health care in Sweden*, April 7th 2014, http://www.oecd.org/els/health-systems/Item7a_SVEUS-National-collaboration-for-value-based-reimbursement-and-monitoring-of-health-care-in-Sweden_Wohlin.pdf

to be defined and discussed in more detail before we can draw any firm conclusions.”

TLV assesses drugs for outpatient care and makes reimbursement decisions, but must ensure that decisions conform to the Swedish parliament’s ethical platform, which is based on the principle of equal human value, says Mr Hedberg. Medical need and conformity with the solidarity principle must also be balanced with cost-effectiveness. In the case of hospital medicines, although health assessment is done in the same way, TLV delivers its assessment straight to the county boards that make decisions on what medicines and devices their own hospitals will use.

“Since county councils are responsible for delivering care in all these sectors, they are trying to come together in a more structured, knowledge-based and evidence-based approach,” Mr Hedberg explains, adding that the regions have formed national committees, including a new therapies council that works closely with TLV.



[County councils] are trying to come together in a more structured, knowledge-based and evidence-based approach.”

Niklas Hedberg, chief pharmacist, TLV; and chair of the executive board, EUnetHTA

Like some other European countries, the Swedish system in theory assesses new drugs or devices according to a cost per

quality-adjusted life year basis, although there is no specific threshold for approving reimbursement that is enshrined in law, Mr Hedberg adds. Instead, the threshold can be overridden depending on the severity of the disease, with higher costs approved for conditions such as terminal cancer or Gaucher’s disease, a rare and severe condition. If treatments can fulfil several conditions—substantial effectiveness, high severity of disease and no treatment alternative—the TLV board is prepared to pay a higher cost. At the same time, concepts such as medical need carry a certain amount of ambiguity, and a reference group of European researchers based in the Netherlands is trying to sort out a more consistent approach.

Dr Nordenström gives the example of a new biological drug used to treat metastatic melanoma, which has a cure rate in 20% of cases. At a cost of SEK800,000 (US\$89,109) per treated patient, health providers were reluctant to prescribe it, but drug companies offered to provide the drug for free to any patients, with the condition that insurance companies would have to fully reimburse the cost for those who were cured.

Ultimately, Mr Hedberg says, Sweden could follow in the steps of other countries, such as Italy, and enter into so-called managed entry agreements with pharmaceutical companies, where both the payer and the manufacturer accept the fact that final data on a treatment won’t be available for some time after it is desirable to make it accessible to patients, and where both sides agree to share that risk.

Summary box: lessons for the rest of Europe and the world

- Sweden's **advanced and interconnected system of electronic health records**, along with its emphasis on egalitarianism in its health system, put a great emphasis on improving and standardising care.
- The country's **quality health registries** create a foundation for the collection and management of data, and provide a basis for clinicians to measure health outcomes. Although there are differences in the level of coverage in individual registries, the infrastructure provides a solid basis that is likely to be improved on with the further development of technologies, such as artificial intelligence (AI). The data provided to registries in Sweden are already having an influence on international care practice.
- With its disease registries, electronic records and plenty of real-world data, Sweden's potential for **predictive analytics, machine learning and applications for AI** is enormous and has already been piloted in several collaborations.
- Sweden's digitalisation has **empowered patients** to become part of their own care, making them an active partner in collecting their patient-reported outcomes.
- Sweden's decentralised health system has provided opportunities for experimentation, including different forms of **value-based pricing and reimbursement**.

Chapter 2: The backlash and obstacles to further progress

While Sweden has marked up a number of successes in experiments in VBHC, not all have been sufficiently developed. There is a need for further progress in digitalisation in order to help connect the dots between information from data registries' RWE.

Meanwhile, Johan Thor, associate professor at Jönköping Academy for Improvement of Health and Welfare, says it remains difficult to identify a broader VBP model that can be scaled up easily, despite the success of some of the VBP experiments discussed earlier.

"It's a laudable idea at the drawing board, but when you try to operationalise the whole thing and find quality indicators and a payment portfolio, it is hard to get that working," he adds.

In addition, not everyone is convinced of the potential merits of these new structures, according to Mr Lindgren.

"Payers have been more reluctant, primarily due to a fear of the administrative burden on physicians and administrators," he explains. Meanwhile, "the coverage in registries is of varying quality, entry into the system is voluntary and some registries don't want a financial component being tied to the data, feeling it might pollute the quality of the data," Mr Lindgren adds.

Indeed, those interviewed say that VBP models are likely to be more applicable to isolated healthcare events or relatively straightforward treatments and surgeries, as opposed to more complex cases involving multiple chronic conditions, for example.

Finally, Dr Thor notes that some of the more ambitious and radical experiments, such as reforms implemented at Karolinska

University Hospital (see case study on page 18) and Sahlgrenska University Hospital in Gothenburg, have triggered a fair amount of backlash.

Incomplete digitalisation process

As is the case in many other countries in Europe and North America, information technology (IT) systems in Sweden are both a boon and a barrier to helping to share the comparatively large amount of health data on the Swedish population.

The country's 21 regions have 21 different IT environments, including systems for electronic health records (EHRs) that vary both within and between regions. Moreover, there is a variety of collaborations between regions, but little on the national level. Previous efforts to get larger healthcare regions to purchase IT functions jointly failed, as they saw their needs as too divergent, according to Mr Lindgren.

Similar work being done by the National Board of Health and Welfare is supporting co-ordination, but there is a lack of legal requirements to organise systems in a particular way.

"I think there is a need for more investment in national IT infrastructure, in terms of having an information backbone," says Mr Lindgren. "We are never going to have one national system, but there needs to be a better and easier system to exchange data."

Data-sharing issues also remain unresolved, something that has yet to be a priority on the legislative level.

Although Sweden's quality registries and well-entrenched medical records system make its population one of the most well tracked, health-wise, in Europe, extricating valuable

RWE from these systems in a form that can be used to assess the value of healthcare is still a longer-term goal.

“It’s more obvious now that we are facing decision problems where we cannot expect to have our answers from random controlled trials or to make decisions within a relevant time frame,” Mr Hedberg explains. At the same time, he notes, variation in the “amount of data, coverage levels of data, and quality and accessibility of data” constitute obstacles to relying on the registries in the short term, especially given that most patients have consented to their data being stored for narrow purposes in the first place.

Ultimately, however, RWE has great potential to provide substantial amounts of data that could help inform care, include larger and more inclusive populations of patients, current methods of treatment, outcomes and risk of treatment, sub-populations that might be at greatest risk, and the cost of treating or not treating them.¹⁵ And it has the capability to provide similar information about new drugs.

“We need to come to a point where there are no practical or technical hurdles, given that there will still be privacy and legal issues,” Mr Hedberg adds, something that will require the strengthening of national and regional structures and international collaboration.

“We need to start gathering data together,” he demands. “Now, more and more people are talking about federated analysis for distribution, gathering all data, sharing it and

comparing your results when you are done.” EUnetHTA is consulting on this process from early 2019.

Regional variation and data banks

A key underlying issue, Dr Thor says, is that Sweden’s quality registries remain incomplete, making it difficult to use them for determining payment for providers.

“There are competing and incompatible motivations for using that kind of data,” he explains. “Using them for payment purposes is sometimes in conflict with using them for learning purposes because we know that payment incentives are very powerful.”

Although data quality “varies greatly” between different quality registries, there are continuing efforts to improve quality, Ms Göransson says, adding that an increasing number of registries are receiving higher scores, indicating that they are improving their content and relevance. Research based on data from the quality registries is also steadily increasing, she notes. The number of scientific articles based on data from 69 quality registers in Sweden and published in peer-reviewed journals rose to 496 in 2016, from 121 in 2009.¹⁶

“In general, you could say that when the diagnosis or procedure is well defined and the patient group not too big, we have higher NQR [Swedish national healthcare quality registry] coverage and better data,” says Fredrik Westander, senior policy analyst at

¹⁵ See Cavlan, C., Chilukuri, S., et al., “Real-world evidence From activity to impact in healthcare decision-making,” <https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/real-world-evidence-from-activity-to-impact-in-healthcare-decision-making>

¹⁶ Lysholm J. and Lindahl B., “Strong development of research based on national quality registries in Sweden”, *Ups J Med Sci*, 2018 Oct 1:1-3.

SALAR. “But large areas of healthcare needs and volume are not covered very well or at all, for example, hypertension in the general population, mental health and primary care in general.” A national project, the PrimärvårdsKvalitet (Primary Care Quality), is likely to improve the availability of clinical data for follow-up use at the primary care level, he adds.



[L]arge areas of healthcare needs and volume are not covered very well or at all [by the Swedish national healthcare quality registry].”

Fredrik Westander, senior policy analyst, SALAR

The data are more applicable when it comes to enabling clinicians and managers to understand how their system and own service perform, Dr Thor says. Extra investment in registries for the five years to 2016 contributed to their enhancement.

Registries differ in the level of agreement between different specialists around the country and their willingness or ability to share data. Some have been leaders, such as the SWEDEHEART Registry in cardiology, which has helped to influence clinical practice and been involved in high-profile clinical studies and new treatments. When the registry began, after extensive professional debate, to publish

survival rates for the country’s 74 cardiac hospitals and a quality index tracking the hospitals’ success in complying with clinical guidelines, improvement rates in the average quality-index score rose from 13% to 22% per year. In addition, providers with the highest mortality improved their quality scores by 40%, narrowing the gap between the best and worst performers.¹⁷

“Also, there is this trade-off of interests between the health system and the authorities paying for it in requiring efforts to build and use these registries and an important sense of ownership on the behalf of clinicians who will enter, analyse and share the data to guide future practice,” Dr Thor adds. “That’s an interesting contrast with the UK situation, where there are audits. They are slightly less voluntary, and seen as less peer-to-peer.”

Moreover, the time it takes to accumulate sufficient outcomes data across registries makes it harder to use them to back up shorter-term changes in clinical practice, according to those interviewed and some recent studies.¹⁸

EHRs, which have existed for the past two decades, are also not always transferrable into aggregate data that can be analysed.

“It depends on how you set up the systems and how you enter the data,” Dr Thor says. “Many health systems around the country have just signed new agreements with EHR providers, and one thing they all look for is a way to capture data in a way that lends itself

¹⁷ Clawson, J., et al., “Competing on Outcomes: Winning Strategies for Value-Based Healthcare”, Boston Consulting Group, January 2014.

¹⁸ Nilsson, K., et al., “Experiences from implementing value-based healthcare at a Swedish University Hospital – a longitudinal interview study”, *BMC Health Services Research*, 2017 Feb 28;17(1):169.

to intelligent analysis.” Ultimately, he adds, there are hopes that medical records can replace registries.

Yet, for that to happen, clinicians and patients will need to identify which outcome measures are important, and put procedures in place to monitor them.

In the case of widespread efforts to restructure entire care pathways in order to improve outcomes, perceptions of success appear to be closely connected to how innovators lay the groundwork. In the case of Stockholm’s Karolinska University Hospital (see case study), the stated goal of improving value was overshadowed by a complex restructuring of care delivery that fuelled perceptions of heavy-handed management that did not adequately listen to the concerns of clinicians. In Uppsala University Hospital, by contrast, careful planning and a slow roll-out has kept stakeholders engaged with the project and provided a catalyst for continued improvement.

One lesson is that even when a concept, such as payment for results rather than process, is popular, it is complex to implement in cases where there are complex care pathways or patients are suffering from multiple conditions.

“It works for simple procedures, like hip replacements, but if you look at liver transplants, it’s not just dependent on the surgeon, but on the patient not drinking alcohol or taking their medicine,” says Dr Nordenström. “How can you say that this

is the result of good healthcare? So for 90% of all diseases, it doesn’t work as a payment system.”

Policymakers need to make sure that VBP is used in areas where it can be most effective, those interviewed say, such as orthopaedic surgeries, obesity management and prostate cancer, where it is easier to reach agreement on how to measure outcomes.

In his own consulting business, Dr Nordenström says he has found that looking at process measures is a vital part of changing outcomes.

“If you have a problem with outcomes, there is something wrong with the way people work,” he explains. “Looking how it should ideally be done according to scientific knowledge is much more a question of quality improvements.”

Measurements such as waiting lists, infection rates and patient experience of pain help healthcare providers focus on quality, he says. And they are already in use. The US Institute of Medicine has outlined a framework that can be used to evaluate quality: care that is safe, timely, effective, efficient, equitable and patient-centred.¹⁹

The challenge of radical reform

Although external consultants played a role in many of the value-based experiments undertaken in Sweden, their role was particularly controversial in the

¹⁹ Agency for Healthcare Research and Quality (US), Six Domains of Health Care Quality, <https://www.ahrq.gov/talkingquality/measures/six-domains.html>.

transformational case of the Karolinska hospital in Stockholm, as the following case study will show.

A key criticism of the external consultants, especially in hospitals where more significant

restructuring of processes took place, was that they rejected patients' ideas of valuable measurements because they were considered "impossible to execute", with advisers often choosing measurements based on the ease of access to data.²⁰

Case Study: Karolinska hospital transformation

In the wake of the creation of OrthoChoice, Karolinska University Hospital management opted to reorganise its healthcare delivery in 2015, based on patient and disease pathways, rather than the traditional structure based on department and medical specialty.

The process identified 100 adult and 70 paediatric "themes", which in turn were divided into patient groups and patient pathways. Under the new structure, for example, breast cancer constituted one pathway, with surgeons, oncologists and radiologists required to work more closely together. This meant new chains of command, with the possibility of an oncologist leading a team including surgeons, who would need to adjust to having someone from another specialty, rather than a senior surgeon, as their boss. For general surgeons, the new structure could mean that they were working in several different pathways.

"To make value-based healthcare [VBHC] work in a Swedish setting, you need to

approach it as a framework, something that shines through all the work and activities being done, and the organisation and the strategy; something that can be larger than that, a framework in which the pathways make it possible to follow the patient from the moment they enter the healthcare system," says Fredrik Öhrn, senior innovation manager at Karolinska University Hospital. "This is still difficult to wrap our head around—that the pathway starts and finishes outside the hospital."

One of the central ideas of organisational change in VBHC is to remove the appointment part of the process, with health providers going to the patient and conferring together. In the case of a prostate-cancer patient, surgeons, oncologists and urologists, as well as physical therapists, nurses and psychologists, would know immediately when a patient had entered the pathway and communicate immediately, rather than waiting for patients to consult each individual professional.

Medical residents who were training in different pathways of surgery had to participate in multiple patient flows,

²⁰ Nilsson, K., et al., "Experiences from implementing value-based healthcare"

frequently leaving it unclear who was in charge of their training. “The pathways are a very good idea for these patients, but for some of the residents, they made life more complicated for them,” says Jörgen Nordenström, emeritus professor of surgery, and freelance consultant in healthcare quality improvement projects at VBMCare.com.

Yet the abandonment of traditional departments involved particular change for senior physicians, stirring a considerable amount of resistance, those interviewed say. The main doctors’ union personified this opposition, approaching the country’s most powerful newspapers claiming that the reorganisation concept “hadn’t been tried anywhere else and that there was no evidence that it works,” Dr Nordenström explains.

“One of the criticisms that has been leveraged in Stockholm is that VBHC is another form of new public management and another way for payers to measure and oversee [providers’] work,” says Mr Lindgren.

“In Stockholm, they were trying to reorganise departments along patient-

centric lines, and there were a lot of problems, both in terms of construction and consultants being contracted on sketchy grounds,” says Mr Lindgren. “This reorganisation was not particularly popular among professional groups and unions, and VBHC has become the blame centre.”

Karolinska is split into two sites, north and south, and the new hospital, in the north of the campus, is designated for specialist care and has fewer beds by design. Stockholm’s other three hospitals will by necessity provide for those who do not need the highly specialised care that Karolinska can offer. Indeed, the emergency room in the new Karolinska site is only accessible to patients arriving by ambulance or helicopter, not those arriving by foot.

“People falling between pathways are still a challenge, and they were often a challenge in the old system,” Mr Öhrn observes. “In a perfect world, you would have patients [for whom it is] always obvious where they belong. You can’t always compare to an industry setting—a patient is a human being.”

In addition, physicians complained that the consultants did not have sufficient knowledge about the hospital’s clinical practice but were nevertheless “driving and controlling”, and that the teams were forced to stick to a rapid change timeline imposed by the consultants.²¹

The hospital’s IT system also provided insufficient support to analyse health outcome measurements, with the result that “measurements were frequently chosen based upon ease of access to data”, according to a 2017 longitudinal study.²²

²¹ Ibid.

²² Ibid.

The case of Karolinska shows that reformers had tried to implement two complex series of changes in parallel, notes Jonas Wohlin, founder of Ivbar, a Swedish health technology advisory and product company: building a new hospital and changing the structure of care delivery so that it was organised around themes and patient groups rather than using traditional models. An argument could be made for implementing both changes simultaneously, Mr Wohlin adds, as that allowed hospital managers to “build the hospital around how you want to operate”. However, so far it has proved to be challenging.

The reorganisation forced clinicians who had previously worked at different clinics to apply for new jobs, raising more opposition from doctors than from nurses, with large newspapers chiming in to the backlash against the reformers.

“The term value-based healthcare was used as the main term of the debate”, Mr Wohlin says. “They put all the changes going on at Karolinska—challenges with reorganisation, new building and discussions around procurement practices, etc—in the VBHC bucket. This has also affected VBHC-related initiatives outside Karolinska.”

Summary box: Sweden’s limitations

While Sweden has been a leader in experimentation, as well as in the implementation of value-based initiatives, it has not been immune to the challenges that face other systems that take on entrenched interests and ways of doing things.

- **Different information technology systems** have complicated the digitalisation process, preventing full interoperability and hampering the exchange of information.

- Quality registries also differ significantly in terms of the amount of **data available, its completeness and utility**. This has contributed to a **lack of data sharing**.
- Efforts to restructure care pathways in at least two large Swedish hospitals, the most ambitious of which was in Karolinska, engendered a backlash among staff and made **value-based healthcare (VBHC) as a whole the focus of protests against specific initiatives**. This was despite the success of VBHC projects elsewhere in the country.

Chapter 3: Overcoming limitations and potential steps forward

The backlash against the perceived flaws of VBHC had a reverberating effect on at least one of the other hospitals that had aimed to follow Karolinska's lead. In Gothenburg, Sahlgrenska University Hospital had duplicated some of the organisational changes imposed in Karolinska, although only across some departments. A newly arrived chief executive (in mid-2018) has decided to bring the reform process to a halt.

"They had done lots of good things there, tested things, wrote articles, but she halted the process," says Dr Nordenström. "She decided it was an organisational fad."

By contrast, in Uppsala, innovators presented the adjustments as less of a revolutionary change than an approach designed to keep the hospital's high-quality care while answering patient concerns, says Morten Kildal, a consultant plastic surgeon and associate professor at Uppsala University Hospital and head of value-based healthcare.

"We saw it as a natural development of what we had done previously, but with a new and much stronger focus on patient engagement, whereas the focus on interprofessional team-based care was more of a 'back-to-basics,'" he says.

The new approach was designed to eliminate the medical silo mentality that had led to a lack of co-operation between different specialties and parts of care pathways. It did not aim to identify new reimbursement processes or undertake a dramatic reorganisation of healthcare delivery. Instead, it sought to improve patient outcomes by improving the processes that were important for those outcomes and gradually adjusting care pathways,

Mr Kildal adds. This involved looking at patient-reported experience measures (PREMs) and patient-reported outcome measures (PROMs), in addition to measures from the quality registries, with patients themselves involved in the working groups.

"Process measures are still important for monitoring daily improvements in addition to outcome measures, but only if they are closely connected to outcomes important for patients. The lead time for a cancer diagnosis or compliance with guidelines are examples of such process measures, but the number of hours in the emergency room or number of operations we can do every day does not say much about the quality of patient care," he adds.

Those responsible for the Uppsala project initially started with just three patient processes, expanding gradually to seven and then nine. The hospital had applied the changes to only 45 patient processes by the end of 2018, with plans to gradually add additional processes each year. By declining to introduce reforms on an organisation-wide basis, and by getting buy-in from stakeholders, Uppsala staff managed to avoid a backlash. The Uppsala value-based care team has also focused on how to engage primary and community care providers in the process of reform.

Introducing team-based care and involving patients in value-creation is key to building a solid and engaged group of stakeholders, Mr Kildal says. "In the beginning, we almost always talked about 'why'. The focus was on the fact that we in Sweden deliver really good medical outcomes and should be proud of that, but the patients' experience is that we don't deliver well-connected

care with continuity between different healthcare providers over time,” he adds. “The ‘what’ was figuring out how to organise. ‘How’ is last. You don’t start with ‘how’.”

Organisational reform, from tentative to radical

In the Västra Götaland region, local healthcare providers were already implementing the limited bundled care projects around orthopaedic and bariatric surgery taking place in several other regions in the country. Yet they had also identified a different problem that was undermining efforts to keep older, frail patients and those with complex health needs out of hospital.

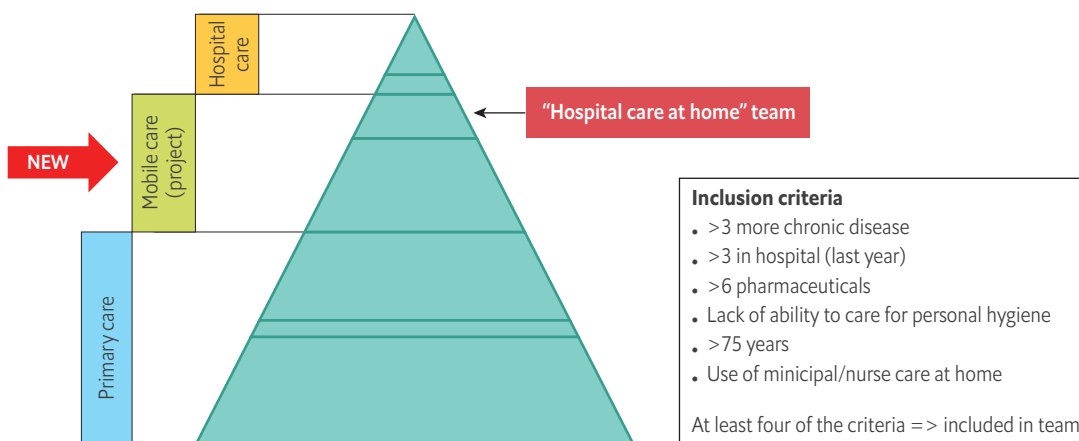
“We had to do something, because we were not using the resources we have as efficiently as we could,” says Tobias Nilsson, chief of healthcare strategy for the region. “Too often, citizens have to co-ordinate care themselves, and once we get care there, we haven’t incorporated what is important to the patients enough.”

The region set up a mobile care pilot programme in which health providers from both hospitals and primary care provide care to patients at home, allowing them to avoid emergency hospitalisations.

“By going home to patients in teams, we can avoid 80-90% of hospital admissions,” Mr Nilsson explains. “We can co-ordinate pharmaceuticals, additional care and internal medicine, and much of that care can be provided at home as well. We can avoid spontaneous and, to some extent, unnecessary visits.”

The project is innovative, both in the fact that it involves hospital teams working outside their normal environment, and because it bridges a key communications gap between hospital and primary care, which is traditionally organised by the regions, and elderly home care, which is operated by local municipalities, allowing greater co-ordination between them. The programme has shown a decrease in emergency admissions and gets

Model for hospital care at home in the Västra Götaland region



Source: Nilsson, T., “Learnings on an holistic integrated care model to tackle pertinent challenges for a sustainable health system of the future”, presentation for Singapore-Sweden Dialogue: The Swedish Example – an Integrated Health Care Model, April 18th 2018.

regular feedback from patients about their daily living experience.

"[Health teams] weren't used to working like that," Mr Nilsson says. "Once they understand it, they welcome it, so we don't have to convince them, but we have to show them the tools."

Nationwide adoption of VBHC

While Sweden's decentralised healthcare system has made it more challenging to introduce value-based reform initiatives on a national level, there have been isolated cross-regional projects.

Sweden's health ministry and seven county councils, representing 70% of the country's population, launched the Swedish national collaboration for value-based reimbursement and monitoring of health care (SVEUS) platform in 2013. The initial phase of SVEUS was organised around eight medical conditions and financed by the health ministry. The platform is designed to support improved population health, better resource use, improved equality and increased clinician satisfaction with how the health system is governed.

"The starting point was that Sweden is unique in terms of the amount of data we have, linked with personal identification numbers," says Mr Wohlin. "But we have not been using the data to its full potential to support development in the healthcare system. And one of the things we haven't been able to do is monitor value; ie, outcomes and cost over entire treatment cycles for specific populations."

The programme's goals are defined as supporting greater efficiency and integration, including an increased focus on patient value, and securing an attractive working environment for healthcare professionals.²³ It is also designed to contribute to knowledge about different populations, hospitals and regions, including what types of patients are being treated, their health outcomes and costs.

The programme organisers have worked with medical organisations, patient organisations, universities, the private sector and the regions themselves to determine how to monitor populations and build technology to allow for continuous monitoring.

The SVEUS platform includes algorithms analysing performance and treatments and identifying areas on which to improve. There are plans eventually to scale up the platform across the entire country. Based on combined analytics and payments platforms, the system is already being used in both Sweden and Finland and is being tested by the French state payer. Mr Westander at SALAR notes that the SVEUS project is one of the initiatives contributing to efforts to build structures in Sweden for collecting and presenting data on healthcare performance. "There are also others, even apart from the national quality registries, and there is a national ambition to co-ordinate different initiatives," he adds.

Today, the SVEUS platform covers 7m people and continuously monitors outcomes and costs for a growing number of patient groups. The platform applies advanced analytics

²³ OECD Expert Group Meeting on Payment Systems, *SVEUS – National collaboration for value-based reimbursement and monitoring of health care in Sweden*, April 7th 2014, http://www.oecd.org/els/health-systems/Item7a_SVEUS-National-collaboration-for-value-based-reimbursement-and-monitoring-of-health-care-in-Sweden_Wohlin.pdf

to automatically identify improvement potential, adjust comparisons between provider organisations for differences in patient preconditions and identify risk groups. It is also possible for providers to track the effects of local improvement programmes on outcomes and cost in real time. Over 30,000 healthcare professionals have access to the platform today, and education efforts are currently under way.



“[I]f you are moving from monitoring productivity to monitoring value, it becomes much more important to monitor the inputs—the patients.”

Jonas Wohlin, founder, Ivbar

Moreover, health authorities in other countries have showed interest in the technology developed in Sweden, which opens up new possibilities for international comparisons. A pilot study was presented at the OECD Health Care Quality and Outcomes meeting in May 2018, showcasing that detailed continuous benchmarking of entire cycles of care could be performed between the French, Swedish and Finnish health systems. As Swedish regions, just as different countries, are not allowed to share patient-level data with each other, the technology developed for

benchmarking within Sweden is applicable also between countries, Mr Wohlin explains.

“Different patient groups will have different preconditions, and if you are moving from monitoring productivity to monitoring value, it becomes much more important to monitor the inputs—the patients,” he adds. “Now, when comparing different populations between hospitals and regions, this new system can adjust for differences in [the] patient case mix, identify preconditions that are relevant and understand expected and actual outcomes and costs.”

In the case of breast-cancer patients, for example, the system can compare treatment across regions and countries, determine how preconditions relate to different outcomes and identify sub-populations.

Meanwhile, the Swedish government approved a research and innovation bill in 2016 with the aim of supporting register-based research and biobank infrastructure, including a national research agenda for register-based research. The Swedish Research Council in 2017 called for a common infrastructure for using databases and coordinating biobanks and associated data.

And Sweden is continuing a longstanding tradition of exchanging ideas and experiences on the national level regarding the system of national quality registries with other

Case study: Tiohundra

In northern Stockholm County, the Tiohundra, or 10100 system, an initiative for municipal care including both hospital and home care, has been going on for 15 years. The integrated company, Tiohundra, includes hospitals, primary care, psychiatry, elderly homes and home care, as well as other services.

This public health company located in Norrtälje, in the northern part of Stockholm County, started with structural problems in the system for providing home healthcare for the elderly and disabled, a problem that still affects many parts of Sweden, according to its chief executive, Peter Graf.

While home healthcare and homes for the disabled are provided by the municipality, hospitals, primary care and psychiatry fall under county control, undermining the integration of both systems, according to Mr Graf. Moreover, both systems are funded with three separate taxes on the municipality, county and national level.

“We have a problem with many aspects of this system—IT, information flow between county and elderly homes, and different reimbursement systems,” he explains. Patients get stuck in county hospitals even when they are well enough to be discharged, because municipal care homes are unwilling to take them.

In 2006 Stockholm County Council and the Municipality of Norrtälje, with 60,000 residents across a large distance, founded Tiohundra, which is 50% owned by the municipality and 50% by the county council. Mr Graf’s assignment was to encourage better integration between all of the departments so as to make care as efficient and effective as possible from the patient’s perspective.

Mr Graf is in regular contact with the head of each department at the hospital, the head of psychiatry, and chief of six primary care units, as well as ten elderly homes, the head of home care, and head of personal assistance and social psychiatry, creating an integrated leadership with the aim of keeping patients out of hospital unless they truly need to be there.

“Because I have all of the leaders in my leadership group, after five years we have a situation where they solve their own problems,” he says. He points to a recent case of a 90-year-old Finnish-speaking dementia patient who was hospitalised with a broken hip. The day after her surgery on a Thursday, she was disoriented, causing problems for hospital staff. The head of the department called her care home, which agreed to take her home that day as long as the hospital provided back-up medication. She was back in the home by Friday afternoon, and quickly settled. Before the Tiohundra system was in place, such a resolution would have been unimaginable, Mr Graf says. The company holds a monthly meeting to follow up on elderly homes, attended not only by the head of the psychiatry team and her deputy managers, but also ordinary staff nurses and doctors.

The funding is also shared between the municipality and the county, with money put into a specially designed common fund run by six politicians from each branch of the government. Although there are still debates about who should pay more for individual services, it is easier to demonstrate the advantages of the system.

“We can show excellent results because it is a flat organisation with good leadership,” Mr Graf says.

countries, most recently with the Netherlands and Norway, Ms Göransson adds.

Still, Fredrik Öhrn, senior innovation manager at Karolinska University Hospital, says he is sceptical that there will be a single approach for a value-based system extended to the entire country. Providing patient outcome data will also be more important to changing the health culture on the regional and national level than merely working together, he adds.

Harnessing technology for integrated healthcare

Better use of technology could help to harness results and reduce the extent to which patients have to co-ordinate their own care and follow-up, according to Mr Nilsson. Diagnosis tests that can be done at home and digitally transferred to hospitals help patients avoid having to go there themselves unless it is absolutely necessary, he notes. Swedish patients have already been able to get kidney dialysis and blood transfusions at home for a couple of decades, he says. Now, those with inflammatory bowel disease can use digital tools to measure the degree of inflammation they are suffering from. Health providers are increasingly looking at other tools that can be used with chronic disease patients.

Meanwhile, digitalisation is playing a bigger role in the more remote regions of Sweden, such as the most northern regions, where video consultation increasingly allows meetings between patients and healthcare staff, something that enables both greater co-ordination between health providers and offers reassurance

for elderly patients who are uncertain about leaving their homes for treatment.

Ultimately, Mr Nilsson says, sharing information between providers has improved, but on the individual health provider level a mind shift is needed.

“We’re used to thinking about physical places and patients are supposed to come here, and then we might have waiting times, but that is the problem of the patients, not us,” he says. Showing the impact of changes on outcomes can go a long way toward validating reforms, with many patients reporting higher levels of security and feelings of being cared for since the mobile home programme was implemented.

Ultimately, continued evaluation of such programmes is also likely to support calls for fewer hospitals and more concentrated care, Mr Nilsson says. “Do we use the resources more efficiently? We need to constantly evaluate if the new method of working is better than the old, and if we find the new way is better, we have to stop the old.”

Providing patient outcome data will also be more important to changing the health culture on the regional and national level than merely working together, he adds.

Sweden’s quality-based registers could also be used better and in real time, Mr Öhrn says. Newer technologies, such as AI, could be used to make use of data more efficiently. Blockchain, a technology that creates data records that can never be changed and can be shared peer-to-peer between networked database systems, could help protect data

from security threats and help speed up the process of exchanging information.

“Data loss makes it difficult with the existing system; that’s why we are exploring blockchain as a possible step forward,” he adds. “We’ve built a system where data collected from patients’ homes can be shared with doctors.

Ultimately, those interviewed say, better linkage between the registers, patient-outcome data and RWE from EHRs could help expand VBHC in Sweden and make the country the leader in transforming health systems based on value measures.

The government has already invested in a Register Utiliser Tool, the prototype of which contains two registers from Statistics Sweden and a healthcare quality register for hand surgery. In a presentation in Helsinki in 2016, Maria Nilsson, of the Swedish Research Council’s Unit for Register-based Research, highlighted that the tool would include an interface for register holders to use to manage metadata. The tool provides for harmonisation between databanks, allowing analysis of differences and similarities of different variables, including PREMs and PROMs.²⁴ Ultimately, the register utiliser tool should be able to help investigators understand what kinds of data exist and where, whether data from different registers can be compared, and identify whether there are data that can be

used to answer specific research questions, she said in the presentation.

The need for political will and collaboration

Yet having the political will is also important, those interviewed say, at a time when most politicians are focusing on waiting lists and health budgets rather than value.

“The Swedish system is a politically driven system, and what is still lacking is the political focus on health outcomes,” says Mr Wohlin of Ivbar. “It’s easier if it comes from the centre. I think if the politicians were clearer in saying they want there to be a system in place that monitors both outcomes and costs for different patients, allowing comparison and learning from one another, we could follow up on that.”

Getting stakeholders on board is also a crucial precondition for focusing more closely on value measures. In this respect, Uppsala University Hospital may be a better model than Karolinska’s top-down approach. Uppsala took a bottom-up approach with strong management support and engagement of different patient groups to implement greater integration. “We don’t know which will be more successful, says Mr Wohlin. “The jury is still out.”

²⁴ Nilsson, M., “Infrastructure for Register-based Research”, presentation to the Nordic Conference on Real World Data, Helsinki Finland, November 29th 2016

Summary box: overcoming Sweden's limitations

Several initiatives are helping Swedish stakeholders to overcome the barriers and limitations discussed in Chapter 2.

- **Cross-regional co-operation** is helping Sweden's successful value-based healthcare initiatives to be shared elsewhere in the country.
- Some of the most successful projects in Sweden have involved **better integration of care systems between municipal and county bodies** that previously acted as silos. **Mobile home healthcare** is one such example, and better co-operation is expected to ultimately help improve **data harmonisation**.
- **Better use of technology**, such as telemedicine, blockchain and artificial intelligence, will help to keep the integration of healthcare delivery and sharing of data on track.
- There have been improvements in **stakeholder collaboration**, but the political will is lacking in some parts of the country.

Conclusion

Sweden's consideration of value in a number of different aspects of healthcare makes it a leader globally in VBHC, at the same time as its quality registries offer a model of how population data can be collected and potentially shared. Some of its registries are viewed as international examples of best practice, and the country's experiments with a variety of payment and reimbursement models are viewed as case studies for other countries looking to introduce value-based payment models.

At the same time, Sweden provides lessons about the potential pitfalls of instituting major changes in the way healthcare is delivered. In particular, the disparate experiences of Karolinska, Sahlgrenska and Uppsala university hospitals provide notable examples of how to introduce care pathways based on value measures.

Sweden's experience with instituting VBHC underscores a number of key challenges: the need to understand what VBHC is and how best to measure it; the importance of political will and careful consultation with all stakeholders; the importance of technology; and the need to tread carefully when introducing new payments systems or care pathways.

First, there is the need to carefully define terminology when we talk about VBHC, in order to avoid a meaningless one-size-fits-all concept and understand where value-based measures can be employed most successfully.

Moreover, the Swedish case studies outlined in this paper show that there is clearly a need for close engagement from clinicians and other stakeholders in order to build sufficient support for reforms. This process should also include greater involvement of patients in consultations about changes in care pathways, as well as in defining the kinds of outcomes measurements that will be used. The experience of Uppsala University Hospital shows how this can work in practice.

The country's ageing population will require both top-down and bottom-up solutions, as well as improvements in IT systems and better use of technology such as telemedicine to provide care in more remote regions, says Mr Graf. In addition, the evolution of predictive technology, such as AI, should make it easier for Sweden's quality registers to be used to their full potential.



[Value-based payment] is a field where there probably is no one right answer.”

Johan Thor, associate professor, Jönköping Academy for Improvement of Health and Welfare

Value-based payment programmes for healthcare delivery, while laudable, must be applied selectively, says Dr Thor, given some built-in contradictions associated with the approach. “We will probably end up with a blending of different approaches,” he says. “There are certain conditions and groups of patients where VBP works well, in defined procedures. But when it comes to chronic conditions and caring for people with multiple conditions, then I think that’s not going to work so well and will need other components such as capitation and fee-for-service. This is a field where there probably is no one right answer.”

Finally, Sweden’s key strength is the data collection structures it has in place, both in terms of its quality registries and extensive electronic health records. Better co-ordination between regions and specialties could make data collection more efficient and enable a better trove of information that will make it easier for the Swedish system to assess value, use it to underpin investment decisions and share these lessons with other countries.

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