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IN DEPTH

Santeon's Lessons from a Decade of Implementing Value-Based Health Care

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Despite growing global support for value-based health care (VBHC), there is no consensus on the best approach for the identification of improvement potential nor on the selection and implementation of improvement initiatives. In addition, varying frames of reference shape how individuals interpret the concept of value and how they implement VBHC. As a result, it is often implemented in various and fragmented ways. Santeon, a nonprofit formal alliance of seven Dutch teaching hospitals, has been working on VBHC since 2012. In this article, intended to address gaps in the literature regarding the implementation of VBHC, the authors use the new strategic agenda for value transformation to share more than 10 years of Santeon's VBHC implementation experience. The authors provide an overview of Santeon's implementation methods; describe challenges and lessons learned; and demonstrate how value transformation was achieved with tangible examples from birth care, chronic kidney disease care, and breast cancer care. In breast cancer care, for example, system-wide improvement initiatives resulted in an increase in breast-conserving surgeries on an outpatient basis (from 391 in 2014 and 2015 to 458 in 2016), and a reduction in reoperation rates owing to positive tumor margins (from 39 in 2014 and 2015 to 33 in 2016). These results were subsequently used to negotiate a collective value-based reimbursement model with insurance companies.

Introduction

Value-based health care (VBHC) steadily gained international traction after Porter and Teisberg¹ introduced the concept as a strategy to address rising costs and increasing disparities in health care. In their original thesis, they argue that value should relate to what matters most to patients. In addition, value should be created and measured across full care cycles of medical conditions. Therefore, on the basis of the notion that patients prioritize outcomes and costs, value was defined as the patient-relevant health outcomes relative to the costs spent to achieve these outcomes.² Furthermore, value-based competition between health care institutions was proposed to transform the health care system and enable it to create more value for patients.^{1,3} The value agenda was subsequently addressed by Porter and Lee⁴ to help health care professionals in their endeavors toward value transformation. At its core, this agenda proposes the reorganization of care pathways into integrated practice units (IPUs). It also proposes the measurement of outcomes and costs because this allows for the identification of improvement potential. The Martini Klinik, a private clinic in Hamburg, Germany, is an excellent example of how these strategic elements were implemented to reorganize health care and drive improvement initiatives that made it a leading treatment center for prostate cancer in Europe.⁵

However, despite the value agenda, most implementation initiatives remain limited to the measurement of outcomes and costs or the reorganization into IPUs.⁶ Likewise, most of the research reports on the application of VBHC through the measurement of outcomes and costs.⁷ This can be attributed to the fact that no implementation strategy was described alongside the conceptualization of VBHC.^{6,8} Moreover, implementation experience from the field — where VBHC is being practiced and delivered — demonstrated that a shift from volume to value requires a cultural change and a change in the way health care professionals work.⁸ This led to the creation of the new strategic agenda for value transformation (by P.B.v.d.N.), which expands on the original value agenda to bring about a long-term change in health care.⁸ However, there is still no consensus on the best approach for the identification of improvement potential nor on the selection and implementation of improvement initiatives.⁸⁻¹¹ In addition, varying frames of reference shape how individuals interpret the concept of value and how they implement VBHC.¹² As a result, it is often implemented in various and fragmented ways.^{12,13} Therefore, those planning on implementing VBHC should consider the complete strategic agenda as well as the interpretation and context of value within their society.

For example, the health care system in the Netherlands is based on regulated competition.¹⁴ Although VBHC is still seen as a way to incentivize health care professionals and move toward better outcomes at lower costs, the concept of value is strongly related to the individual patient and the decisions that patients have to make.¹² As a result, value is increasingly seen as something that should emerge from the interaction between patients and health care professionals. In this context, VBHC became intertwined with shared decision-making (SDM); health care professionals tend to the individual needs of each patient, and aggregated outcome information is used to improve and personalize health care.

In 2007, six Dutch teaching hospitals decided to form an alliance on the basis of the shared belief that the quality of health care could be improved through mutual trust and collaboration. In 2010, this group of hospitals formalized their alliance by signing agreements to collaborate under the umbrella organization Santeon. At that time, hospitals in the Netherlands had to report a growing number of performance indicators to governmental institutions, regulatory bodies, and health insurers. In addition, Santeon was considering a major reorganization of services; however, it was difficult to decide how and where services could be combined without the relevant health outcome data. Concurrently, two Santeon hospitals, Catharina Hospital and St. Antonius Hospital, had started to develop and measure standard sets of outcome measures as an initiative to improve their health care quality for patients with heart disease. The success and enthusiasm of this initiative as well as Santeon's growing need for outcome data inspired Santeon to launch its VBHC initiative in 2012. In 2016, this ultimately culminated in the Better Together Program used by Santeon to systematically measure, compare, and improve value. This program is a cornerstone of Santeon's approach to VBHC and has been used to successfully drive improvement initiatives across the care cycles of 16 medical conditions that account for an estimated 20% of Santeon's annual health care costs. In 2017, Maastad Hospital joined Santeon, which enabled the alliance to offer access to care across the nation's geographic regions. The Netherlands includes about 17.5 million residents, about 93% of whom reside in urban areas of the country, which covers about 16,000 square miles (Figure 1). Together, these hospitals generate €3 billion in annual revenues and account for approximately 383,000 admissions and day treatments as well as 122,000 operations per year, representing about 11% of the Dutch hospital care volume.

In this article, we share more than 10 years of Santeon's implementation experience. Our goals are to describe Santeon's approach to VBHC and to address gaps in the literature regarding the implementation of VBHC. In addition, we discuss why we believe Santeon's approach has been successful and provide some insights that can be used by health care professionals in their VBHC ambitions.

Implementation Methods

Even though the conceptual literature portrays value-based redesign as a fundamental change with radical organizational and financial implications,³ most health care institutions apply a variety of value-based design parameters in incremental steps over time.¹⁵ This also holds true for Santeon; the starting point for us has been the formal alliance in which the intention to improve the quality of care through the principles of VBHC, mutual trust, and collaboration has remained a constant. After Santeon embraced the VBHC concept in 2012, each member hospital committed to a long-term value transformation strategy: VBHC became a standard topic during board meetings, and progress on value transformation is increasingly embedded as a standard element within planning and control cycles. Between 2015 and 2016, Santeon focused on developing a working VBHC model and as a result, created the Better Together Program, which it started implementing in 2016. Prepared with a shared ambition, the necessary organizational structure, governance, and a working VBHC model, Santeon was able to organize condition-specific multidisciplinary improvement teams, define condition-specific metrics used in projects

FIGURE 1

The Santeon Hospitals in the Netherlands

This map depicts the locations of the seven teaching hospitals in the Santeon alliance across the Netherlands.



Source: The authors

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and improvement initiatives, and — over time — delineate the three phases that Santeon distinguishes in becoming value based: (1) internal transparency, (2) external transparency, and (3) Santeon’s standards of care.

“ Even though the conceptual literature portrays value-based redesign as a fundamental change with radical organizational and financial implications, most health care institutions apply a variety of value-based design parameters in incremental steps over time.”

Here, we share insights on several aspects related to implementation methods, including organizational structure and governance, the Better Together Program, the Better Together improvement cycle, and the three phases in becoming a value-based organization.

Organizational Structure and Governance

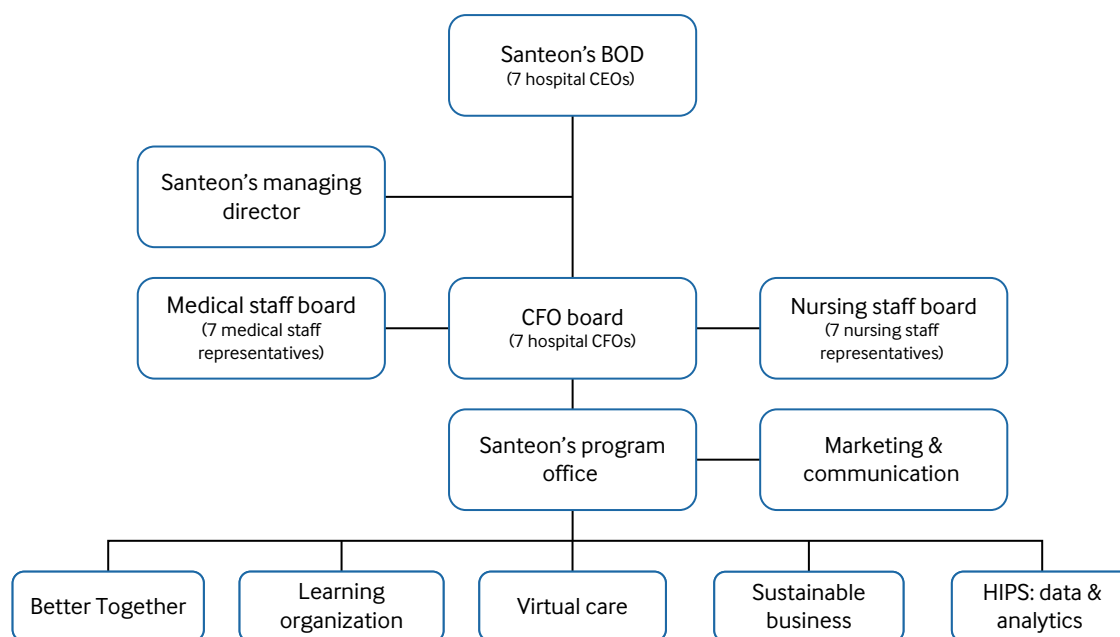
Santeon is a nonprofit organization that allows its member hospitals to operate as independent health care institutions while simultaneously fostering the implementation of VBHC through trust, collaboration, transparency, and accountability. Santeon's driving force is not a financial one but rather, an intrinsic motivation to improve the value of health care in its member hospitals. Santeon offers this through a variety of services and platforms that it has created, the costs of which are paid for by the member hospitals from their own revenue streams.

Santeon's program office guides and supports its member hospitals in becoming value based. This office (Figure 2) is led by its board of directors (BOD), which consists of the CEOs of its

FIGURE 2

Santeon's Organizational Structure and System of Central Governance

This chart depicts how Santeon is organized and governs its value-based health care efforts. Ratified board proposals are added to a Santeon-wide agenda, after which Santeon's program office effectuates this agenda through five steering committees led by executive-level representatives (bottom row). Each steering committee is tasked with a portfolio that reflects Santeon's strategic priorities.



BOD = board of directors, CFO = chief financial officer, HIPS = Health Intelligence Platform Santeon.

Source: The authors

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member hospitals. This ensures equal representation during board meetings where overarching decisions about VBHC strategy and policy are made. Santeon's managing director guides the BOD during this process and helps to promote Santeon's vision, mission, and ambitions. Chief financial officers and executive-level staff representatives from Santeon's hospitals oversee Santeon's financial activities and serve a strategic advisory role for the BOD. Representatives from marketing and communications help to formulate and maintain Santeon's communication plans and platforms as well as translate newsworthy topics into an internal and external communication strategy. All board proposals have to be ratified by each member hospital before the proposals are added to a Santeon-wide agenda. Santeon's office effectuates this agenda through five steering committees, each of which is represented by Santeon's managing director as well as executive-level representatives from the member hospitals, including two members of the BOD and two staff representatives.

Each steering committee is tasked with a portfolio that reflects one of Santeon's five strategic priorities (Table 1).

Table 1. Santeon's Current Strategic Priorities for 2025

Steering Committee	Strategic Priorities
Better Together Program	Expand the program to 25 conditions
Better Together Program	Use the program to personalize health care
Better Together Program	Use the program to achieve the highest standard of care
Better Together Program	Demonstrate the program's impact to employees, patients, and external parties
Learning organization	Facilitate quality research on implementation and evaluation of VBHC
Learning organization	Develop and maintain a value-oriented environment for health care professionals
Learning organization	Help health care professionals quickly adopt value-based improvements and innovations
Sustainable business	Translate insights obtained from value-based projects and improvement initiatives into a financial return on investment for Santeon
Sustainable business	Create sustainable business models that enable Santeon to invest in, and accelerate, priority portfolios
Virtual care	Become the leading virtual care center for the Netherlands
Virtual care	Facilitate digital transformation through innovation and collaboration
Virtual care	Transform physical care pathways into digital pathways with a strong focus on prevention
HIPS: Data and analytics	Implement HIPS for all of the conditions in the Better Together Program
HIPS: Data and analytics	Support improvement teams with reliable data through real-time dashboards
HIPS: Data and analytics	Use HIPS to provide real-world outcome information for decision support interventions
HIPS: Data and analytics	Use HIPS to incorporate real-world outcomes in tools for patients, health care professionals, and research

VBHC = value-based health care, HIPS = Health Intelligence Platform Santeon. Source: The authors

The steering committees lead a number of teams that translate and implement the strategic priorities through various improvement initiatives and projects. All in all, Santeon employs 40 professionals (e.g., project managers, data managers, IT specialists, researchers, and lawyers) who collaborate with approximately 800 health care professionals (e.g., physicians, nurses, project leaders, and data analysts) who are employed by and work in the member hospitals to generate value.

The Better Together Program

The Better Together Program started with four medical conditions in 2016 and has expanded to 16 medical conditions over the years, with the last three launched in 2020 (Figure 3); another nine are expected to be added by 2025.

New conditions may be considered for the Better Together Program annually. Medical conditions are included in the Better Together Program on the basis of six criteria (Table 2).

For each of the medical conditions in the Better Together Program, multidisciplinary improvement teams systematically measure, compare, and improve value in recurring 6-month improvement cycles. During each cycle, improvement teams (1) collect and scan data for differences between the member hospitals, (2) analyze the differences and identify areas for improvement, and (3) implement improvement initiatives. Throughout this process, improvement teams focus on both standardization by improving outcomes and costs at the population level and personalization by delivering health care at the individual patient level (Figure 4).

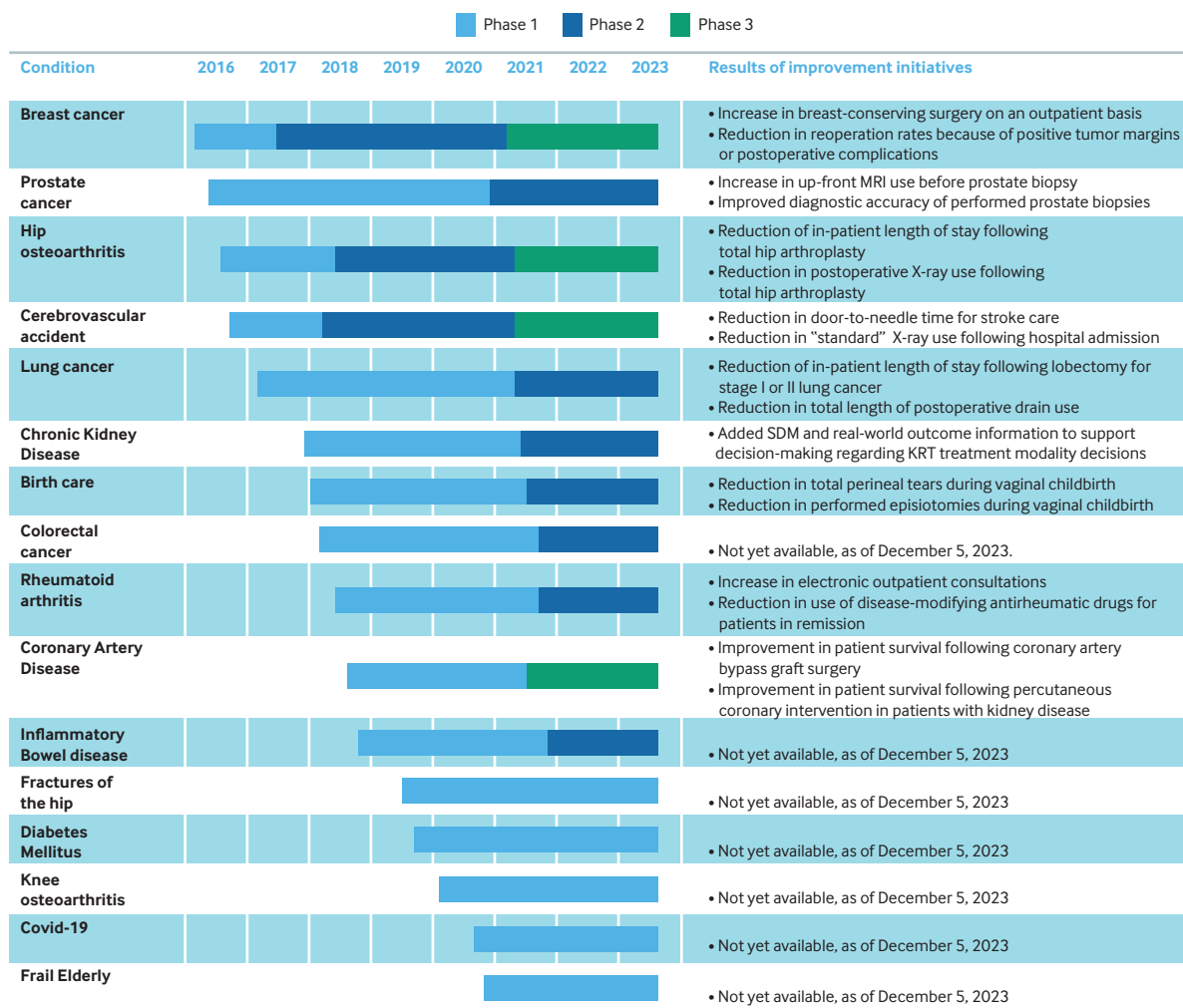
When a new condition has been selected for the Better Together Program, multidisciplinary improvement teams have to be assembled in each member hospital. In addition, two member hospitals are chosen as the lead and colead hospitals. Each improvement team consists of members who represent all relevant disciplines and stakeholders from the complete care cycle (i.e., clinicians, support staff, patients, patient caregivers, and patient representatives). Each team is led by a local physician (medical leader), local manager (project leader), and a local data analyst. These members are important drivers in the development and implementation of improvement initiatives as well as in the communication and coordination with the other teams. Improvement teams from the lead and colead hospitals are also tasked with the development of the condition-specific codebook and scorecard. Codebooks define the patient population and contain information on all variable definitions and the agreed-upon methods for data extraction and analysis. Scorecards (an example is shown in Table 3) are used to retrieve outcome information during improvement cycles and generally contain four to six case-mix variables and 15–20 measures, including health outcome, process, and cost measures.

When available, standardized outcome sets are used during the development of new scorecards. Patients and patient representatives ensure that patient-relevant health outcomes are included in each scorecard. Patients also help to define key moments across care cycles that need to be personalized and help decide on health outcome measures that can be used improve health care

FIGURE 3

The Medical Conditions in the Better Together Program, 2016–2023

This figure depicts the 16 medical conditions currently in the Better Together Program and how far along the medical conditions are in the three phases that Santeon distinguishes in becoming value based. Phase 1 is internal transparency, phase 2 is external transparency, and phase 3 is Santeon's standard of care. Not yet available denotes that Santeon is not ready to publish the results of improvement initiatives. Coronary artery disease "skipped" phase 2 because Santeon was already publishing these outcomes before the Better Together Program came into existence. The Santeon hospitals started measuring and comparing outcomes for heart care, including coronary artery disease, in 2012. This eventually resulted in Meetbaar Beter, a national foundation that aimed to use outcome indicators to improve the quality of health care in the participating centers. In 2017, Meetbaar Beter fused with two other registries and became the National Heart Registry.



KRT = kidney replacement therapy, MRI = magnetic resonance imaging, SDM = shared decision-making, X-ray = energetic high-frequency electromagnetic radiation.

Source: The authors

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Table 2. Medical Condition Inclusion Criteria for the Better Together Program

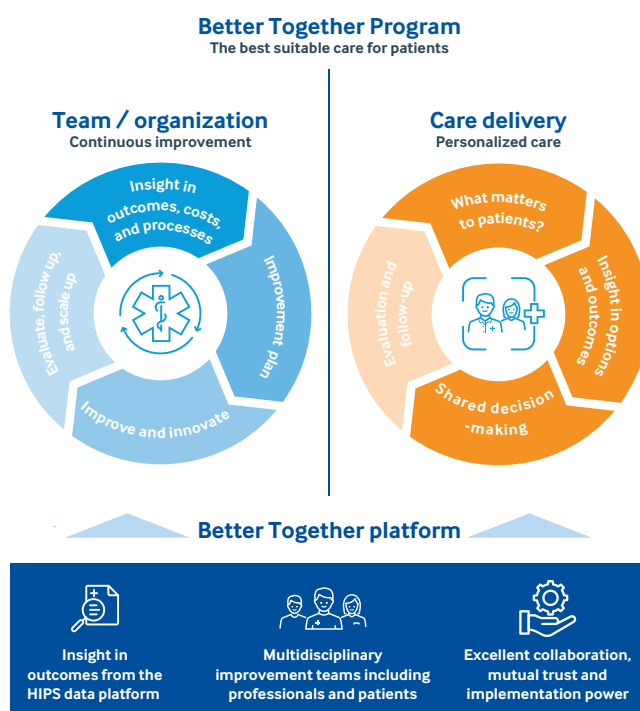
Criterion Number	Criterion
1	The burden of disease associated with the condition (defined in disability-adjusted life years)
2	The enthusiasm of health care professionals to participate in the program
3	The expected improvement potential and annual costs associated with the condition
4	Whether standardized outcome sets have been developed for the condition
5	Whether the condition contributes to diversity in the program
6	Alignment with strategic priorities of the member hospitals

Each criterion is evaluated when a new medical condition is considered for the Better Together program. Source: The authors

FIGURE 4

The Better Together Program

This figure depicts the dual focus of Santeon's Better Together Program for delivering the best suitable care for patients through continuous improvement at the population level and personalized care delivery at the individual patient level. Supported by the Better Together platform, this program enables and supports the implementation of value-based health care through data insights and multidisciplinary improvement teams as well as the collaboration among the Santeon hospitals.



HIPS = Health Intelligence Platform Santeon.

Source: The authors

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Table 3. Birth Care Scorecard Used in the Better Together Program

Category	Metric
Outcome	Mortality: maternal (postpartum) and infant (before, during, and after delivery)
Outcome	Blood loss (postpartum bleeding) and blood transfusions
Outcome	Complete rupture
Outcome	Episiotomy
Outcome	Maternal rehospitalization
Outcome	Child admitted to NICU
Outcome	Apgar Score, after 5 minutes
Outcome	pH of umbilical cord
Outcome	Preterm birth, spontaneous and nonspontaneous
Outcome	Oxygen deficiency in child
Outcome	Neonatal infection
Outcome	Breastfeeding, intention and at discharge
Cost	Length of stay, mother and child
Cost	Number of cesarean sections, in and out of office hours
Cost	Cesarean section operating times, gross and net
Cost	Number of outpatient visits
Cost	Pregnancy counseling
Cost	Use of drugs: analgesia during childbirth
Process	Pain management, in and out of office hours
Process	Postpartum checkups: outpatient visits and telephone consultations

Source: The authors

at the individual level. Santeon developed a road map to SDM (Table 4) to help improvement teams personalize health care and foster the implementation of SDM.

The entire process, from choosing a new medical condition for the program to assembling multidisciplinary improvement teams, completing the scorecard and codebook as well as defining key moments that need to be personalized, generally takes a total of 6 months. Santeon's Better Together Program manager and data manager guide the improvement teams from inception to help maintain quality control and team alignment during this process. In addition, a handbook developed by Santeon for internal use describes the goals and processes of the program, defines the roles and responsibilities of each employee and collaborator, and ensures uniformity through standard operating procedures and data protocols. Depending on progress, medical leaders from the lead hospitals have to report to Santeon's BOD at least once a year. During these meetings, they provide the board with the results from implemented improvement initiatives and report on progress from ongoing ones. This enables the board to track progress and provide assistance where necessary. In addition, all project leaders meet with the Better Together steering committee every 6 weeks to discuss progress and when necessary,

Table 4. Santeon's Road Map to Foster Shared Decision-Making with Patients

Step	Action
1	Assess your current practice and set goals
2	Evaluate the care pathway and determine the key moments to be personalized
3	Determine what outcome information will be included
4	Determine the use of decision support interventions
5	Choose what education is relevant to help health care professionals correctly use decision support interventions and outcome information to support SDM
6	Determine the implementation strategy
7	Develop a strategy for evaluation
8	Safeguard the implementation and improvement

If more key moments for shared decision-making (SDM) are identified during this process, start again at Step 3. Source: The authors

concerns as well. The committee can subsequently choose to communicate these concerns with the BOD if it deems it necessary.

Inside the Better Together Improvement Cycle

The first 2 months of the Better Together improvement cycle are used to collect and compare outcomes and costs among all of the Santeon hospitals. Data analysts use the codebook and scorecard to extract relevant data from electronic health records. The collected data are subsequently cleaned and validated in collaboration with the medical leaders, project leaders, and a data manager. The lead and colead improvement teams subsequently analyze the data for variation and prepare for the next 2-month period of the improvement cycle. During this time, improvement teams meet to discuss variation in the data and identify areas for improvement. These meetings are also used to evaluate whether the variation might be a result of case-mix variables or differences in local data registration procedures, operating procedures, or protocols. Afterward, improvement teams prepare for the final 2-month period of the improvement cycle. During this time, Santeon-wide and/or local improvement initiatives are developed, selected, and implemented in clinical practice. The results of these improvement initiatives are analyzed and discussed in subsequent improvement cycles, resulting in a process of continuous feedback and learning.

The Three Phases in Becoming a Value-Based Organization

Santeon distinguishes three phases in becoming value based (Table 5): (1) internal transparency, (2) external transparency, and (3) Santeon's standard of care.

As of December 5, 2023, five conditions in the Better Together Program are in the first phase (Figure 3). Santeon strives to complete this first phase within three improvement cycles (i.e., 18 months), but this can vary on the basis of internal factors (e.g., how fast the scorecard and codebooks are developed, data availability and complexity) and external factors (e.g., Covid-19 disrupting the workflow). Ideally, the first improvement cycle (months 1–6) is used to eliminate

Table 5. Three Phases That Santeon Distinguishes in Becoming Value Based

Phase 1. Internal Transparency	Phase 2. External Transparency	Phase 3. Santeon's Standard of Care
Gain confidence in sharing and using data; do not judge but learn	Publish results, generate attention	Define the standard of care: develop own standards that outcomes should meet
Get the data and data definitions in order	Compare outcomes with domestic and foreign parties	Embed the practice of continuously improving as standard practice and automate data collection procedures
Reduce variation and realize initial improvements	Carry out in-depth testing of hypotheses	Agree on value-based reimbursement contracts with insurance companies
	Use real-world data to better inform patients and support shared decision-making	Practice value-based innovation and research

Source: The authors

teething problems in data definitions and collection procedures as well as to gain confidence in using and sharing the collected data. Then, the second improvement cycle (months 7–12) is used to develop and implement the first improvement initiatives. In the third improvement cycle (months 13–18), professionals discuss the results of these initiatives, develop new improvement initiatives, and prepare for the next phase in the process. Seven conditions in the Better Together Program have currently progressed to the second phase (Figure 3), during which results from completed improvement cycles are made publicly available. Santeon publishes these results to inspire health care professionals and to stimulate the development of improvement initiatives domestically and in other countries. In addition, when available, outcomes are compared with national or international parties to evaluate additional improvement potential. Afterward, in-depth hypotheses that might arise on the basis of experiences and/or insights obtained from previous improvement cycles or the comparison of outcomes are tested in subsequent improvement cycles. Moreover, real-world data are used to develop infographics and other decision support interventions (e.g., patient decision aids) that can be used to support SDM and help patients make health care choices on the basis of their personal situation, values, and preferences.

Finally, in the third and final phase, Santeon develops a standard of care. Four conditions in the Better Together Program have now reached this final stage (Figure 3). This phase is used for benchmarking. Improvement teams continuously evaluate how outcomes differ among the Santeon hospitals over time, how these outcomes compare with national quality registries, and whether the improvement initiatives generate sustained value. Efforts are made to embed the practice of continuously improving as a standard practice and automate data collection procedures. This phase is also used to move the health care industry toward a more value-based system. For example, improved outcomes and lower costs can be used to negotiate value-based reimbursement contracts with insurance companies or to better inform purchasing contracts with suppliers.

Implementation Results

For this paper, we selected three conditions — birth care, chronic kidney disease (CKD) care, and breast cancer care — from the Better Together Program to demonstrate Santeon's

implementation efforts through various improvements initiatives, each of which considers different elements of the new strategic agenda for value transformation. This new strategic agenda builds on the original value agenda,⁴ and it consists of the following 10 elements:

1. measure outcomes and costs for every patient,
2. set up value-based quality improvement,
3. integrate value in patient communication,
4. organize into IPUs,
5. move to bundled payments for care cycles,
6. integrate care delivery systems,
7. expand geographic reach,
8. invest in a culture of value delivery,
9. build learning platforms for health care professionals, and
10. build an enabling IT platform.

Improvement Initiatives in Birth Care

Birth care was included in the Better Together Program at the beginning of 2018 (Figure 3). It is defined as all of the obstetric and pediatric care during pregnancy and the first 2 months after delivery. In 2018, 15,881 deliveries took place in the Santeon hospitals, ranging from 1,231 at Catharina Hospital to 5,405 at OLVG. Most of the births were spontaneous deliveries (65%) followed by unplanned cesarean sections (C-sections; 13%), planned C-sections (11%), and operative vaginal deliveries (11%).

Measuring Outcomes and Setting Up Value-Based Quality Improvement

For birth care, we demonstrate how Santeon considered the first and second elements of the new strategic agenda for value transformation by using data on practice variation to set up improvement initiatives aimed at reducing the rate of deliveries complicated by obstetric anal sphincter injuries (OASIS), episiotomies, and unplanned C-sections.¹⁶

Reducing the Rate of OASIS and Episiotomies

OASIS and episiotomies are both known risk factors for incontinence, sexual dysfunction, and chronic pain.^{17,18} During the first birth care improvement cycle, it was noted that between 1% and 5% of deliveries in the Santeon hospitals were complicated by OASIS (Table 6).

Table 6. Obstetric anal Sphincter Injuries and Episiotomy: Clinical Deliveries in the First Half of 2018 and the First Half of 2019

Santeon Hospital	First Half Each Combined 2018 and 2019	Episiotomy: First Half Each Combined 2018 and 2019
Catharina Hospital	2.0% of 956	33.9% of 956
Canisius Wilhelmina Hospital	3.3% of 1,193	28.7% of 1,193
Maasstad Hospital	1.4% of 1,218	29.3% of 1,218
Martini Hospital	4.1% of 1,378	29.2% of 1,378
Medisch Spectrum Twente	2.7% of 1,210	39.4% of 1,210
OLVG	2.6% of 3,853	22.6% of 3,853
St. Antonius Hospital*	4.8% of 1,912	23.8% of 2,029

The first half of the year is January 1 to June 30; this includes all deliveries and unplanned cesarean sections. OASIS = obstetric anal sphincter injuries. *Denominators for ruptures and episiotomies differ because rupture records are incomplete for 117 patients. Source: The authors

Of note, Maasstad Hospital appeared to have the lowest number of deliveries complicated by 1.4% of 1,218 births. As best practice, midwives, gynecologists, and obstetricians in Maasstad Hospital were using a hands-on delivery method, whereas the health care professionals in the other Santeon hospitals were mainly using other methods they were familiar with. This hands-on technique was subsequently adopted as standard practice and taught to the midwives, gynecologists, and obstetricians of all Santeon hospitals in 2019. In St. Antonius Hospital, a reduction in OASIS from 4.8% of 1,912 births to 2.9% of 1,045 births was subsequently measured in the second half of 2019 from July 1 to December 31.

Improvement teams also noted that episiotomies were applied in a range from 22.6% of deliveries at OLVG to 39.4% of deliveries at Medisch Spectrum Twente. Because of these high percentages, local improvement initiatives were started to lower these numbers. For example, Medisch Spectrum Twente started an improvement initiative to raise awareness among midwives and obstetricians about the indications for as well as the number of performed episiotomies. As part of this initiative, obstetricians started reviewing each episiotomy during change-of-shift reports, which resulted in a 12% reduction in performed episiotomies (Table 7).

Reducing the Rate of Unplanned C-sections

Compared with planned C-sections, unplanned C-sections have a higher risk of intraoperative and postoperative complications.¹⁹ Unplanned C-sections also increase the risk of complications in subsequent pregnancies (particularly uterine rupture during labor).²⁰ During the first improvement cycle for birth care, it was noted that there was considerable variation between the Santeon hospitals in the rate of unplanned C-sections performed: from 11.4% at Catharina Hospital to 17.8% at OLVG. In addition, the risk for an unplanned C-section was increased when labor was induced, sometimes more than doubling (Table 8).

Of note, children born in the hospitals that performed the lower percentages of unplanned C-sections (Canisius Wilhelmina and Catharina) were just as healthy as the children born in the other Santeon hospitals. This prompted improvement teams to analyze why these two hospitals

Table 7. Episiotomies in Medisch Spectrum Twente, January 1, 2018 to December 31, 2020

Period	Deliveries with Episiotomy, n (%)
Q1 2018	125 of 295 (42.4%)
Q2 2018	137 of 309 (44.4%)
Q3 2018	153 of 357 (42.9%)
Q4 2018	119 of 281 (42.4%)
Improvement Initiative Begins	
Q1 2019	115 of 271 (42.4%)
Q2 2019	98 of 335 (29.3%)
Q3 2019	118 of 339 (34.8%)
Q4 2019	121 of 298 (40.6%)
Q1 2020	103 of 335 (30.7%)
Q2 2020	79 of 262 (30.2%)
Q3 2020	103 of 343 (30.0%)

Q = quarter. Unplanned cesarean sections are excluded because episiotomies are not performed in this population. Source: The authors

were performing a lower rate of unplanned C-sections and what the other Santeon hospitals could do to improve their practices. As part of this initiative, improvement teams noted that Maasstad Hospital and Medisch Spectrum Twente had the highest shares of deliveries complicated by unplanned C-sections after labor was induced: 27.1% and 27.6%, respectively (Table 8). To reduce the number of induced deliveries, the teams analyzed how frequently and for what reasons labor was being induced in these hospitals. This revealed that during July to December 2019, Maasstad Hospital was inducing labor at a greater rate than Medisch Spectrum Twente (40% of 409 deliveries vs. 27% of 444 deliveries). Maasstad Hospital was also inducing labor more often because of excessive maternal stress (18 patients, 11%) compared with Medisch Spectrum Twente (3 patients, 2%) (Table 9).

Table 8. Baseline Data on Unplanned Cesarean Sections in Nulliparous, Term, Singleton, and Vertex Pregnancies Deliveries, July 1, 2018 to June 30, 2019

Santeon Hospital	Number of All Deliveries	Percentage of Unplanned C-Sections, NTSV Delivery	Probability of Unplanned C-Section, NTSV Delivery, Spontaneous (%)	Probability of Unplanned C-Section, NTSV Delivery, Induced (%)
Catharina Hospital	532	11.4	8.1	17.4
Canisius Wilhelmina Hospital	632	11.6	7.7	20.6
Maasstad Hospital	703	15.1	9.8	27.1
Martini Hospital	846	15.8	14.2	19.4
Medisch Spectrum Twente	726	17.6	15.2	27.6
OLVG	2,645	17.8	12.8	22.0
St. Antonius Hospital	960	16.6	13.1	22.2

C-section = cesarean section, NTSV = nulliparous, term, singleton, and vertex pregnancies (i.e., low risk, first time). Source: The authors

Table 9. Percentage of Total Induced Clinical Deliveries in Nulliparous, Term, Singleton, and Vertex Pregnancies, July 1 to December 31, 2019

Indication	Maastad Hospital, 409 Deliveries; 163 Indications for Induced Delivery: n, Percentage of 163	Medisch Spectrum Twente, 444 Deliveries; 122 Indications for Induced Delivery: n, Percentage of 122
Serotiny	43, 26%	57, 47%
Decreased fetal movement	19, 12%	4, 3%
Fetal growth restriction	18, 11%	11, 9%
Excessive stress	18, 11%	3, 2%
Gestational diabetes	17, 10%	2, 2%
Pulmonary embolism	14, 9%	20, 16%
Premature rupture of membranes	8, 5%	0, 0%
Macrosomia	7, 4%	3, 2%
Pregnancy-induced hypertension	7, 4%	14, 11%
Cholestasis	4, 3%	2, 2%
Meconium-stained amniotic fluid	2, 1%	0, 0%
Diabetes mellitus	1, 1%	0, 0%
Other	5, 3%	6, 5%

Source: The authors

Consequently, midwives and obstetricians in Maastad Hospital decided to wait longer before inducing labor. Earlier improvement initiatives had already demonstrated that this could be effective. For example, Catharina Hospital used to perform more unplanned C-sections than previously reported (Table 8). In fact, it was initially comparable with the other Santeon hospitals; however, this quickly decreased (Table 10) after the gynecologists and obstetricians visited Canisius Wilhelmina Hospital as part of a local improvement initiative and started waiting longer before inducing labor or performing unplanned C-sections.

Improvement Initiatives in CKD Care

CKD care was simultaneously included in the Better Together Program with birth care at the start of 2018. This condition is defined as all kidney disease-specific care provided to patients with CKD. In 2020, approximately 15,000 patients with CKD were treated in the Santeon hospitals, and about 9% of these patients were on dialysis, the majority of which was hemodialysis (Table 11).

For CKD care, we demonstrate how Santeon considered the third and eighth elements of the new strategic agenda for value transformation by personalizing health care through the implementation of SDM and real-world outcomes to support kidney replacement therapy treatment modality decisions.²¹

Integrating Value in Patient Communication

The CKD care improvement teams collaborated with the Dutch Kidney Patient Association to develop decision support interventions designed to help patients make health care choices on

Table 10. Unplanned Cesarean Sections in Nulliparous, Term, Singleton, and Vertex Pregnancies Deliveries: Clinical Deliveries from January 1, 2017 to June 30, 2019

Santeon Hospital	Period	Unplanned C-Sections, NTSV Deliveries	Percentage
Catharina Hospital	H1 2017	353	16
Catharina Hospital	H1 2018	330	16
Catharina Hospital	H2 2018	266	11
Catharina Hospital	H1 2019	273	12
Canisius Wilhelmina Hospital	H1 2017	396	13
Canisius Wilhelmina Hospital	H1 2018	314	16
Canisius Wilhelmina Hospital	H2 2018	293	12
Canisius Wilhelmina Hospital	H1 2019	339	11

Data from the second half of the year from July 1 to December 31 (H2) in 2017 were not included; at that time, the birth care improvement teams performed an in-depth analysis instead of collecting and analyzing data from H2 2017. C-section = cesarean section, NTSV = nulliparous, term, singleton, and vertex pregnancies (i.e., low risk, first time), H1 = first half of the year from January 1 to June 30. H2 = second half of the year from July 1 to December 31. Source: The authors

the basis of their personal situation, values, and preferences. The improvement teams used Santeon's road map to SDM (Table 4) and decided to focus their efforts on an intervention to help patients and clinicians choose a kidney failure treatment modality that best suited the personal situation of each patient. The kidney failure decision aid was subsequently developed with patients, health care professionals, and other stakeholders in an iterative process of cocreation.²² It consists of three components designed to help patients and clinicians engage in SDM. Retrospective cohort data of patients treated for kidney failure in Dutch hospitals (including the Santeon hospitals) were used to incorporate real-world outcome information in the decision aid such that patients could compare 1-, 3-, and 5-year survival rates for patients on the basis of their age and the four care options presented.

By design, the decision aid helps patients with CKD choose whether they would prefer to prolong their life or focus on quality of life (i.e., kidney replacement therapy vs. conservative care management). It then helps those who opt for kidney replacement therapy choose between

Table 11. Patients with Chronic Kidney Disease and Type of Dialysis, 2020

Santeon Hospital	Patients with CKD	Patients on Dialysis, All	Dialysis Type, Hemodialysis (%)	Dialysis Type, Peritoneal Dialysis (%)
Catharina Hospital	2,430	227	92	8
Canisius Wilhelmina Hospital	1,537	138	91	9
Maasstad Hospital	2,308	260	80	20
Martini Hospital	1,187	159	82	18
Medisch Spectrum Twente	1,880	182	93	7
OLVG	2,646	238	70	30
St. Antonius Hospital	2,497	223	74	26

Source: The authors

their treatment options (i.e., transplantation and/or dialysis). It does so by helping patients become aware of the decision they have to make, consider what matters most to them, understand their treatment options, and formulate personal treatment goals and preferences. Finally, it helps patients and clinicians discuss these treatment goals and preferences and helps them make shared treatment modality decisions on the basis of what matters most to each patient.

“*Santeon was able to organize condition-specific multidisciplinary improvement teams, define condition-specific metrics used in projects and improvement initiatives, and — over time — delineate the three phases that Santeon distinguishes in becoming value based: (1) internal transparency, (2) external transparency, and (3) Santeon’s standards of care.*”

Investing in a Culture of Value Delivery

During the development of the decision aid, the CKD improvement teams also focused on the culture of value delivery. A multifaceted implementation strategy was developed to (1) raise clinicians’ awareness about VBHC, SDM, and the decision aid; (2) increase clinicians’ willingness to change their behavior and work according to the principles of VBHC and SDM; and (3) provide clinicians with the skills needed to correctly implement the decision aid in clinical practice. This strategy consisted of an introductory session about SDM and outcome information, two electronic-learning courses about SDM and outcome information, and conversational skills training with actors. During this training, clinicians learned to successfully engage their patients in SDM and support this process with outcome information.

The implementation strategy also consisted of collaborative efforts with clinicians to help integrate the decision aid in local care pathways. Kickoff meetings were held to plan a formal launch date and instruct clinicians on how to use the decision aid. Centralized implementation support and technical assistance were provided. In addition, local ambassadors (e.g., research nurses and other health care professionals with a predisposition for change management, research, and SDM) were assigned to closely monitor progress and stimulate implementation. During its first year of use, 304 of 350 eligible patients (86%) were handed the decision aid, and of those 304, 91% of users reported being very satisfied with its layout and contents. As of 2023, the CKD decision aid is now part of standard care in all Santeon hospitals. It is currently under investigation in an interrupted time series design study that will provide evidence for its effects as part of a multifaceted implementation strategy on SDM and other decision-making outcomes.²³

Improvement Initiatives in Breast Care

Breast cancer care — defined as all of the care provided to female patients with stage 0 to III breast cancer — was the first medical condition in the Better Together Program. In 2018, 1,641 new patients were diagnosed with breast cancer in the Santeon hospitals. Of these patients, 1,383

Table 12. Proportion of Patients with Stages I–III Breast Cancer, 2018

Santeon Hospital	Patients	Stage I (%)	Stage II (%)	Stage III (%)
Catharina Hospital	139	59	40	1
Canisius Wilhelmina Hospital*	214	61	29	6
Maasstad Hospital	108	63	31	6
Martini Hospital	210	55	32	13
Medisch Spectrum Twente	220	59	36	5
OLVG	213	69	26	5
St. Antonius Hospital	279	57	39	4

The stages adhere to the recognized definitions for stages 0 through IV. Here, stage IV was an exclusion criterion as these patients follow a different care pathway. *Stage percentages do not add to 100% because of missing data for eight patients (4%). Source: The authors

had an invasive carcinoma, with most of them having stage I carcinoma (Table 12).

The remaining 258 patients were diagnosed with stage 0 (i.e., noninvasive) breast cancer, ranging from 18 patients in Maasstad Hospital to 58 patients in St. Antonius Hospital.

For breast cancer care, we demonstrate how Santeon considered the fourth and fifth elements of the new strategic agenda for value transformation by reorganizing care pathways to be more condition specific and by signing value-based reimbursement contracts with insurance companies.²⁴

Organizing Care Around Conditions: Alternatives to the IPU

All of Santeon's member hospitals have vertical function-based organizational structures that offer health care through a discrete set of specialized services by various departments. Suboptimal coordination and cooperation between highly dependent departments can result in substandard care for patients.²⁵ Therefore, Santeon started organizing health care around full care cycles of medical conditions as opposed to specialized departments. However, this requires challenging changes in the organizational and financial structures of hospitals that have been in place for decades.³ Not surprisingly, hospitals are generally hesitant to reorganize into IPUs, preferring to leave their organizational units intact while making incremental changes in value-based design parameters.¹⁵ One such change includes formally establishing condition-specific value-based organizational units within pre-existing organizational structures. Three Santeon hospitals have established such units: St. Antonius Hospital, Medisch Spectrum Twente, and OLVG.

In St. Antonius Hospital, these so-called care chains are formal units that carry full responsibility for the value of care outcomes and costs. However, these are not IPUs in the strictest sense because the units do not involve full profit and loss responsibility, and employees formally remain part of the pre-existing traditional departments. As of November 2023, there are 10 care chains at St. Antonius, including 1 care chain for breast cancer care. Each care chain is led by a daily board that consists of a physician, a nurse, and a manager who is responsible for all functions of the care chain, including clinical, operational, and financial functions. These care

chains further consist of all condition-specific (health care) professionals and support staff as well as members of the Better Together improvement team. Instead of project teams that work on top of the hospital's regular organizational structure, the improvement teams are now part of an organizational unit that is linked to the hospital's hierarchical structure, creating a hybrid or matrix organization.^{26,27} As a result, the development and implementation of improvement initiatives are accelerated. For example, in breast cancer care, the care chain implemented improvement initiatives that reduced the biopsy-to-result waiting time from 3 days to 1 day within their first operational year. Moreover, these first care chains experience positive effects on employee satisfaction.

“*Patients also help to define key moments across care cycles that need to be personalized and help decide on health outcome measures that can be used improve health care at the individual level.*”

Moving to Bundled Payments for Care Cycles

The health care system in the Netherlands consists of mandatory basic insurance for everyone that is provided by private insurers. Adults pay premiums, annual deductibles, and coinsurance or copayments on select services and drugs. The government pays for children's coverage up to age 18 years.¹⁴ Health care is designed as a system of care products that are developed by the Dutch Healthcare Authority (NZa), which is an autonomous administrative authority that falls under the Dutch Ministry of Health, Welfare and Sport.²⁸ The NZa acts as an independent regulator of the health care market and monitors the conduct of insurance companies and health care providers.

Care products consist of a predetermined set of activities that are carried out for the diagnostics and treatment of a medical condition. Insurance companies and health care providers use these care products to negotiate annual prices and purchasing agreements. Care products allow for the comparison of prices between health care providers and provide an overview on health care prices and volume during purchasing agreements. However, care products do not provide any information on the quality or value of health care. At the end of 2016, system-wide improvement initiatives across the care cycles for breast cancer care resulted in an increase in breast-conserving surgeries on an outpatient basis (from 391 among patients diagnosed in 2014 and 2015 to 458 among patients diagnosed in 2016) and a reduction in reoperation rates because of positive tumor margins (from 39 among patients diagnosed in 2014 and 2015 to 33 among patients diagnosed in 2016) or postoperative complications (from a range of 1.0%–4.1% among patients diagnosed in 2014 and 2015 to a range of 0.4%–3.9% among patients diagnosed in 2016). These results were used to negotiate a collective value-based reimbursement model for breast cancer with insurance companies. The main purpose of this model was to evaluate whether a contractual value-based impulse would lead to more value in health care. All parties agreed on a uniform set of nine value-based key performance indicators (KPIs) (Table 13).

Table 13. Key Performance Indicators Used in Value-Based Reimbursement Contracts with Insurance Companies, 2017–2019

Dimension	Number	Key Performance Indicator
Customer experience	1	Net promoter score in patients with breast cancer
Quality	2	Percentage of breast-conserving surgery in patients with stage T1
Quality	3	Percentage of patients who undergo axillary lavage
Quality	4	Reoperation rate because of positive resection margins (percentage)
Quality	5	Reoperation rate because of postoperative complications (percentage)
Process	6	Less than 5-week waiting time between diagnosis and operation (percentage)
Process	7	Less than 5-week waiting time between diagnosis and neoadjuvant therapy (percentage)
Costs	8	Percentage of breast-conserving surgery without hospitalization
Costs	9a	Number of diagnostic activities per patient (MRI)
Costs	9b	Number of diagnostic activities per patient (CT)

This represents the key performance indicators negotiated by Santeon and insurance companies to assess value-based performance of breast cancer care in 2017–2019. MRI = magnetic resonance imaging, CT = computed tomography. Source: The authors

Four multiyear contracts for the years 2017–2019 were signed with four insurance companies. Two insurance companies agreed to pay-for-performance contracts supplemented with bonus-malus (good-bad) agreements, where predetermined caps on volume could increase or decrease on the basis of performance. Two insurance companies agreed to bundled payment contracts that also were supplemented with bonus-malus agreements. In these contracts, health care providers received a fixed amount for each new patient with breast cancer; the better the performance, the higher the bundle amount per patient. Over the 3 years, these four value-based reimbursement contracts generated a combined additional income of approximately €1.8 million (about €0.6 million per year) on top of a collective annual revenue of €23 million for breast cancer care. It was determined that about one quarter (22%) of this additional €1.8 million of income (€410,583) was directly generated by the creation of value to meet the value-based KPIs. The remainder, about 78% (€1,459,405), was generated by the additional volume created through the bonus-malus agreements as a reward for meeting the value-based KPIs.

Overarching Initiatives That Facilitate the Implementation of VBHC

Here, we demonstrate how Santeon considered the 9th and 10th elements of the new strategic agenda for value transformation by empowering health care professionals to practice VBHC and by enabling the use of real-time data for all of its data-driven projects.

Building Learning Platforms for Health Care Professionals

Teaching health care professionals about VBHC and providing them with the necessary skills to practice VBHC and conduct VBHC-related research are important factors to move the health care community toward a more value-based system. Since 2019, Santeon has increasingly focused on building learning platforms for health care professionals as part of its ambition to become a learning organization by 2025.

The Santeon Professional program offers projects and training courses to develop talents and help health care professionals learn about VBHC. One example is Santeon Spirit, a Santeon-wide improvement initiative specifically dedicated to nurses. This initiative fosters the contribution of nurses in VBHC, empowers nurses to participate in innovation, and develops leadership skills. It has resulted in an annual webinar for nurses dedicated to sharing expertise and encouraging collaboration and an annual improvement award that rewards nurses for their efforts in conceptualizing and implementing improvement initiatives. It has also resulted in an advisory council of nurses who provide a nursing perspective on strategy and policy during board meetings as well as a Santeon-wide nursing board mandated to make overarching decisions about nursing protocol and policy.

“*The entire process, from choosing a new medical condition for the program to assembling multidisciplinary improvement teams, completing the scorecard and codebook as well as defining key moments that need to be personalized, generally takes a total of 6 months.*”

Research on Value Creation

With VBHC as a guiding principle, large-scale, value-driven research is conducted within the Santeon hospitals. Insights and results obtained from Santeon’s improvement cycles have contributed to research efforts on the effectiveness of implementation strategies and the applications of real-world outcome information in clinical practice. In 2019, Santeon also prioritized research as part of its ambition to become a learning organization and in 2022 defined a research agenda to stimulate research related to its strategic priorities. It also established a research office to streamline ethical and research governance approval for new research projects in its member hospitals, to support researchers in conducting their research, and to facilitate networking between researchers. Finally, Santeon also established the Santeon Research Network on Value Creation to help its researchers collaborate. This network organizes quarterly meetings, during which researchers are invited to present VBHC-related research and discuss research methodology as well as implementation strategies.

Building Enabling Technology Platforms

Santeon has developed enabling technology platforms to facilitate the implementation of VBHC in its member hospitals. These platforms have streamlined data collection processes, allowing health care professionals to easily and reliably analyze and compare real-world outcomes during improvement cycles.

Santeon has a pharma database used to monitor which pharmaceuticals are prescribed, administered, and claimed by its member hospitals.²⁹ This information is used to identify variation in pharmacotherapy practices and costs among the Santeon hospitals. It is also used to develop and implement Santeon-wide guidelines that can be used to prescribe the most effective drugs with the fewest side effects. Santeon can subsequently monitor guideline adherence and inform purchasing contracts with manufacturers. Santeon also uses these guidelines to keep the costs related to expensive pharmaceuticals (e.g., biologicals) as low as possible. Costs for these expensive pharmaceuticals are reimbursed separately by insurance companies in the Netherlands. A preferential policy for biosimilars — which are generally cheaper and more accessible — in these guidelines helps to keep premiums low by keeping the costs as low as possible.

Over the years, this policy resulted in (1) a 100% switch to biosimilars of trastuzumab (used to treat breast and stomach cancer) and rituximab (used to treat multiple autoimmune diseases and different types of cancer), (2) a 97.5% switch to biosimilars of adalimumab (used to treat multiple autoimmune diseases), and (3) an 85% switch to biosimilars of infliximab (used to treat multiple autoimmune diseases). All in all, Santeon's preferential policy on the basis of its pharma database generates an average annual cost savings of approximately €20 million in the procurement of the approximately €250 million total annual spend for expensive pharmaceuticals.

Health Intelligence Platform Santeon

In 2019, Santeon initiated the development of Health Intelligence Platform Santeon (HIPS), its own data platform that facilitates the exchange and comparison of data among its member hospitals. Before HIPS, each Santeon hospital had a different data infrastructure. Improvement teams first had to “translate” scorecards and codebooks to a “local” data language before they could identify and extract the relevant data. Moving to a Santeon-wide data language benefits the Better Together Program, and it also helps Santeon maintain and utilize its pharma database and facilitates other data-driven improvement projects. First, a common data language, the Santeon Information Model, was developed in collaboration with Nictiz, the Dutch independent national competence center for electronic exchange of health and care information.³⁰ Afterwards, the extract, transform, load (ETL) processes for the data had to be defined and implemented. An ETL process is a three-phase process where data of interest are first extracted, then transformed, and finally uploaded in an output data repository. With HIPS, these data can be downloaded upon request in a central data repository. After partitioning, the relevant data are then extracted and visualized in a dashboard (Figure 5).

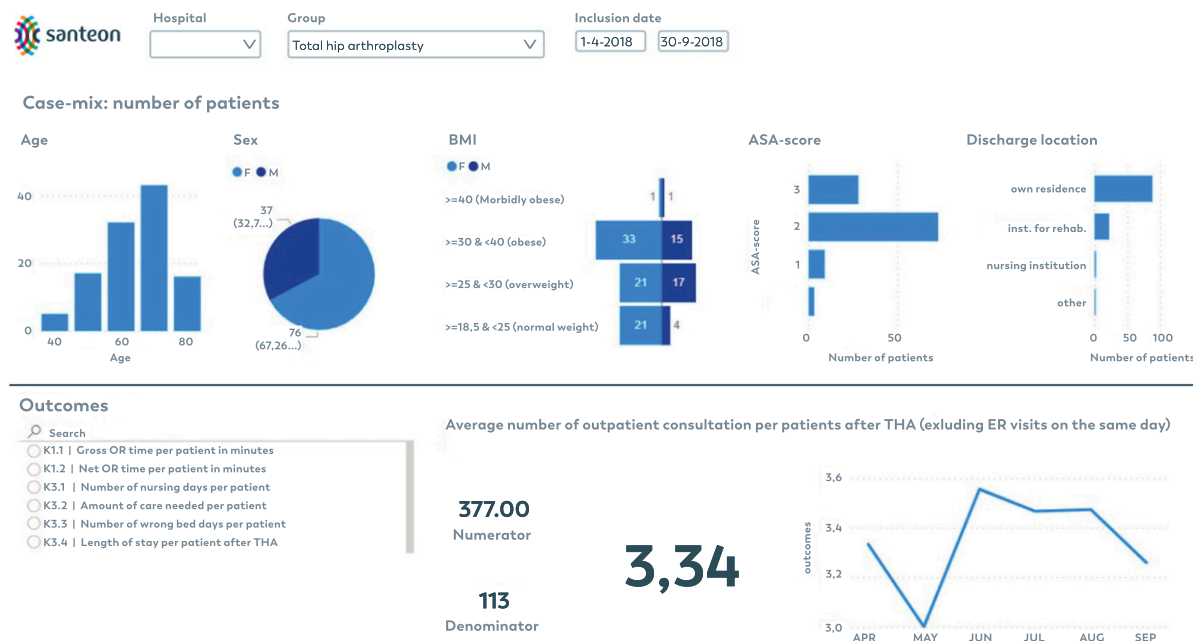
In 2022, Santeon officially launched HIPS for knee osteoarthritis in its member hospitals. Over the coming years, Santeon will continue to develop and implement HIPS for all of the conditions in the Better Together Program.

FIGURE 5

Example of the Health Intelligence Platform Santeon (HIPS) Dashboard

This depiction of the Santeon HIPS for total hip arthroplasty shows aggregated patient-related information along with selected clinical actions and outcomes. These real-time data can be downloaded upon request, facilitating data-driven projects.

Example of HIPS data dashboard



ASA = American Society of Anesthesiologists, BMI = body-mass index, THA = total hip arthroplasty.

Source: The authors

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Discussion

The Santeon approach to VBHC has been developed within the Dutch context of value, however, the value agenda itself remains universal. It is up to the implementing party to develop an implementation strategy that considers each element of the strategic agenda within the respective societal context of value.

Although the value agenda by Porter and Lee⁴ suggests that health care professionals should first reorganize care pathways into IPU, most health care institutions start with measuring outcomes and costs.^{6,7} This might be explained by the fact that redesigning organizational structures takes considerable time, effort, and resources.^{15,31} Porter and Lee also put more emphasis on the measurement of outcomes and costs in their more recent work.³² In addition, a recent qualitative study that evaluated the experiences of value-based quality improvement teams reported no

advantages related to starting with the reorganization into IPU as opposed to starting with measuring outcomes and costs.³³ Another qualitative study that evaluated how implementation science could be of value to VBHC also suggests starting with an outcome registry as part of an integrated implementation model.¹¹ Therefore, we suggest that interested parties start with measuring outcomes and costs and work their way through the respective elements of the strategic agenda as they grow into a value-based institution.

“

In St. Antonius Hospital, these so-called care chains are formal units that carry full responsibility for the value of care outcomes and costs. However, these are not integrated practice units in the strictest sense because the units do not involve full profit and loss responsibility, and employees formally remain part of the pre-existing traditional departments.”

A qualitative study featuring semistructured interviews with Santeon’s value-based quality improvement teams reported on nine factors divided over three domains (organization, culture, and practice) that determine whether the implementation of VBHC and value-based quality improvement is successful or not.³³

Regarding the first domain, the organization of VBHC and value-based quality improvement, the study found that a facilitating system for value-based improvement teams within the organization seems essential. This means embedding value-based redesign in hospital strategy, policy documents, and planning and control cycles.^{10,33} It also means investing in long-term organizational change, wherein teams leading the value-based redesign are provided with the responsibility and mandate to make the necessary changes within the institution.¹⁵ We believe we demonstrated how Santeon’s organization and governance created the right environment to set up value-based improvement initiatives and projects. Even though this is a form of centralized governance, health care professionals and patients in the Santeon hospitals have always been involved in the conceptualization and implementation of Santeon’s projects and improvement initiatives. In addition, Santeon hospitals are now decentralizing by establishing formally appointed condition-specific organizational units tasked with value-based redesign.

With respect to the second domain, culture, the qualitative study found that, in practice, the adoption of the VBHC concept among employees seems particularly important.³⁴ Although Santeon has always advocated for external transparency, trust, and the involvement of all relevant stakeholders in its multidisciplinary improvement teams, it has been putting more effort into changing the culture in health care over the past few years. This is reflected in Santeon’s efforts to teach health care professionals the necessary skills to transition to VBHC as well as provide them with the right tools to implement VBHC. Examples include the educational courses developed to foster the use of real-world outcome information and SDM in CKD care and the Santeon Professional program designed to develop talents and help health care professionals learn about VBHC.

Considering the third domain, practical and methodological issues regarding the practice of VBHC and value-based quality improvement are frequently mentioned in the literature.^{6,8-11} The selection of goals, improvement initiatives, and outcome data seems most important as these directly translate into practice. Although there is no clear best methodology for the selection of goals and improvement initiatives, Santeon's approach to VBHC offers some guidance from practical experience. For a more evidence-based approach, the Intervention Selection Toolbox³⁴ and the Integrated Implementation Model for improvement projects¹¹ may provide some direction. Nevertheless, it seems preferable to complement long-cycle benchmarking with short-cycle feedback when new goals are set and projects or initiatives are developed. Real-time insight into selected outcomes and costs motivates team members to continue working toward their goal.^{9,33,35} This underscores the importance of a standardized data infrastructure that facilitates data exchange and analysis of quality data on selected outcomes and costs. For this to work, good source registration is crucial. Health and care information models, like the Santeon Information Model, can be used to standardize and capture quality data from care processes for projects and improvement initiatives.^{27,36} The International Consortium for Health Outcomes Measurement, which defines global sets of standardized patient-centered outcome measures, acknowledges the importance of standardized source registration, and offers implementation guidance.³⁷

“ Although the value agenda and the new strategic agenda for value transformation provide a set of strategic elements that can be implemented through a process of planning and execution, it is probably more realistic to view implementation as a dynamic process where a premeditated plan is modified over time to fit to the needs of an institution or society.”

Although the value agenda⁴ and the new strategic agenda for value transformation⁸ provide a set of strategic elements that can be implemented through a process of planning and execution, it is probably more realistic to view implementation as a dynamic process where a premeditated plan is modified over time to fit to the needs of an institution or society.³⁵ Santeon also shifted its focus from standardization to both standardization and personalization as VBHC became more intertwined with SDM in the Netherlands. Moreover, Santeon continuously incorporates lessons learned into its VBHC strategy and policy as part of its standard of care and its ambition to become a learning organization.

One such lesson is not only to improve on the basis of variation in the data but also on the experiences and ideas from people in the field. The annual nursing webinar as part of Santeon Spirit is one example of how key players can be empowered to participate and provide insights from experience. Another lesson comes from the value-based bundled payment reimbursement contracts that were signed for breast cancer care. Even though these contracts generated value, the administrative load to register and report all the care activities necessary to reach a bundle settlement turned out to be too labor intensive. In the Santeon hospitals, breast cancer care

comprises more than 50 care products. In an effort to capture the diversity of care pathways within breast cancer care, six bundles were developed for the bundled payment contracts. Nevertheless, a lot of manual work was necessary to register, report, and match all the care activities on an individual patient level between Santeon and the insurers. Ultimately, this administrative and technical burden became too great to sustainably continue. When considering bundled payment contracts, it is probably better to start with a uniform care pathway that can be covered with one bundle. More complex care pathways may be considered as hospitals and insurance companies get more experienced and efficient in capturing and communicating the necessary data with one another.

In addition to the technical challenges and administrative burden, Santeon did not directly reinvest the additional income generated by the value-based reimbursement contracts in the improvement teams that developed the value-based improvement initiatives that largely contributed to Santeon's efforts to meet value-based KPIs. This was unintentional but ultimately had a negative impact on motivation and long-term KPI compliance. Nevertheless, the experience that Santeon gained from this collaborative initiative has transformed its relationship with the insurers into a partnership, ultimately creating more room for the qualitative story behind the value-based KPI scores. This deepening dialogue may ultimately benefit both parties through understanding, trust, and future cocreation.

With an ambitious set of strategic priorities for 2025, Santeon also looks outward for lessons learned by others, including lessons on expanding geographic reach and integrating care delivery systems. In addition, more research on the practicalities and effects of different implementation strategies that consider the complete strategic agenda is also needed. We call on our colleagues to share their experiences; we can only progress in the transition toward VBHC through the transparent and systematic comparison of our strategies and outcomes.

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