



August 23, 2023

VBHC@Santeon

EVBHC Summerschool

Pieter de Bey, managing director Santeon

A photograph of children in a classroom setting, looking at a butterfly on a cocoon. The cocoon is hanging from a string. The butterfly is yellow and black with red and white markings. The children are pointing at the cocoon. The background is blurred green foliage.

**Santeon hospitals
transforming health
care for future
generations**

**We accelerate the
transformation
towards value
based care in the
Netherlands**





If we don't act?

**Care accessibility,
health equity, outcomes
and costs under pressure**

***'If not us, who?
If not now, when?'***
ICHOM, Barcelona 2023

In the Netherlands a national focus on ‘Passende Zorg’ (Appropriate care)



- WRR publication: *“Choose for sustainable care”*
- Integral Care Agreement: *“Collaborate and invest to achieve a healthy and sustainable care system”*








Agenda

- Santeon introduction
- Santeon approach to Value Based Health Care
- Santeon approach to value base digital transformation (“Zorg bij jou”)
- Lessons learned

Santeon: 'Learning system' of 7 teaching hospitals with national coverage in The Netherlands



Ambitions

- 1** Patients are actively involved in their treatment choices

- 2** Professionals work closely together

- 3** Shared forces in innovation and research

- 4** Quality of care is transparent

- 5** Make care affordable and accessible


Combined, we are the largest provider of hospital services in the country



35.600

employees



2.100

physicians



1.000

residents



10.100

nurses



379.000

hospital
admissions



11%

national volume
hospital care



114.000

surgeries



3.1 billion

revenues

Value Based Health Care (VBHC) is our guiding principle

$$\text{Patient Value} = \frac{\text{Health Outcomes}}{\text{Cost}}$$



VBHC is data-driven, patient-centered, care



Florence Nightingale was a pioneer in 1863

She emphasized the importance of measuring outcomes **broader than mortality**

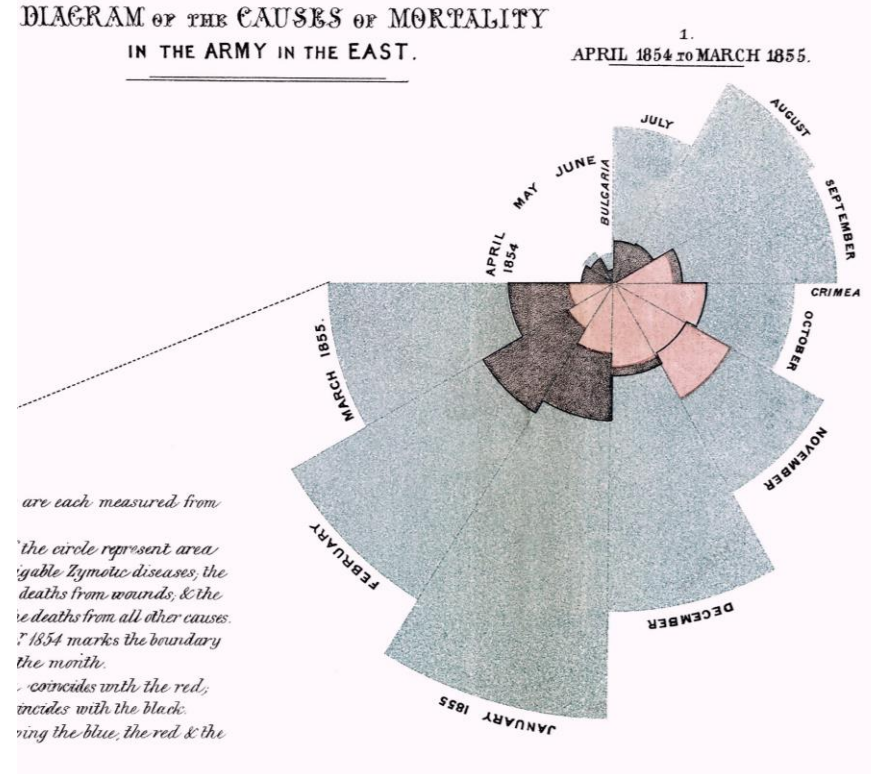
“If the function of a hospital were to kill the sick, statistical comparisons of this nature would be admissible.” (Nightingale 1863)



“As, however, its proper function is to restore the sick to health as speedily as possible, the elements which really give information as to whether this is done or not, are those which show the proportion of sick restored to health, and the average time which has been required for this object.”

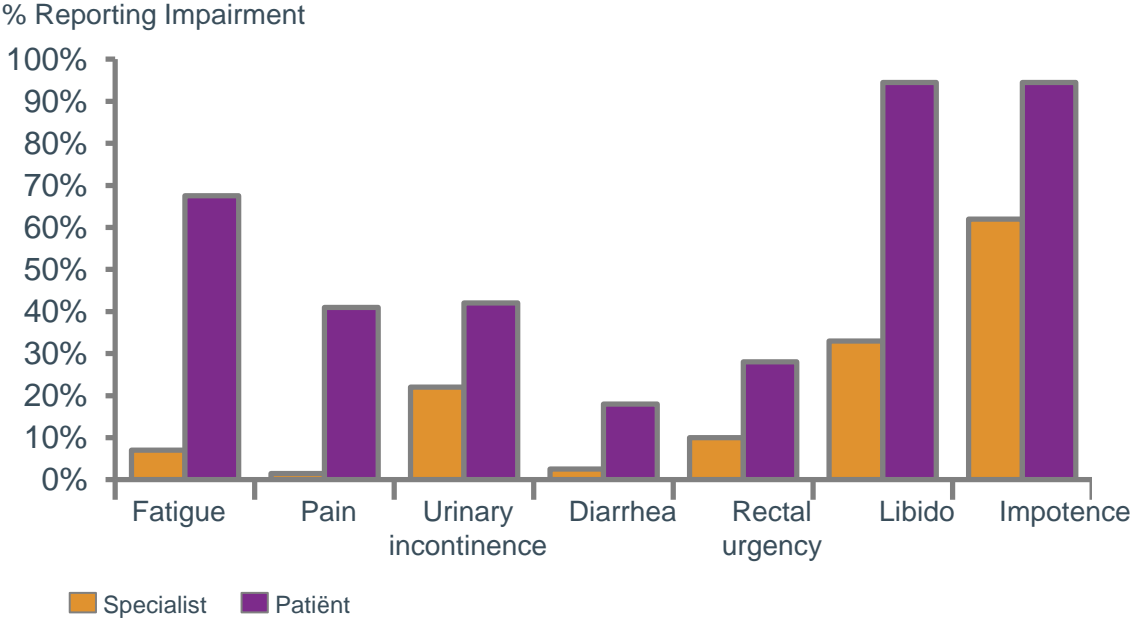
Besides being a nurse, she was also a brilliant statistician – working in Crimea

She introduced statistics and graphical representations with the aim to continuously improve care



Physicians and patients can have different views on outcomes

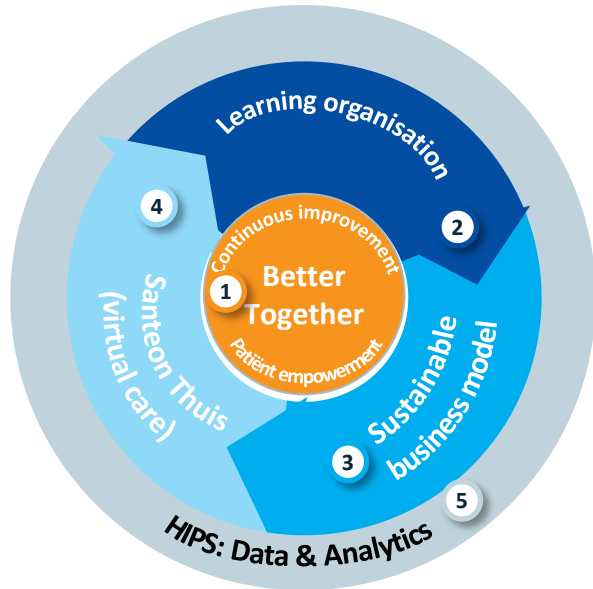
Patient- and physician-reported outcomes two years after prostate cancer radio beam therapy



Source: Sonn GA, Sadetsky N, Presti JC, Litwin MS. Differing perceptions of quality of life in patients with prostate cancer and their doctors. J Urol 2013 Jan;189(1 Suppl):S59-65; discussion S65.

How we achieve our ambitions: Five strategic priorities

Santeon 2025
Versneller van vernieuwing



1

Samen Beter (“Better Together”)

2

**Learning organisation
with talented professionals**

3

Sustainable business model

4

Zorg bij jou (virtual care)

5

HIPS: Data & Analytics

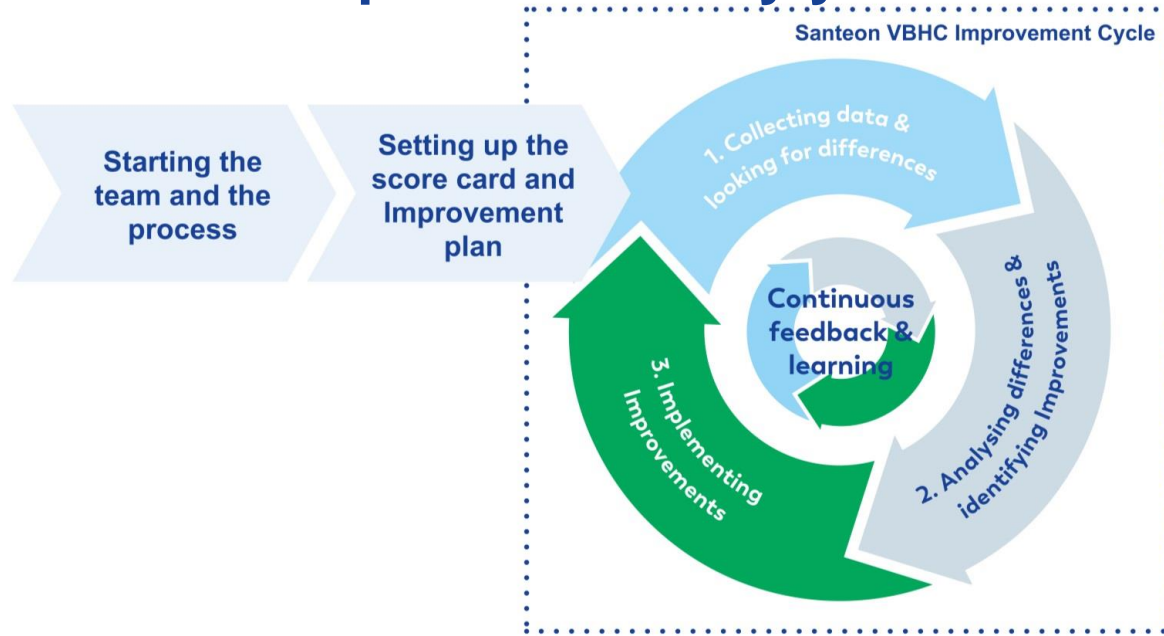
Go to www.menti.com and use code 1527 0763





Santeon VBHC approach:
“Better together” (Samen Beter)

Santeon has been running a standardized improvement cycle across the 7 hospitals for many years



- Two cycles of 6 months annually
- Around a patient group (not medical procedure)
- Full transparency on patient outcomes, costs, processes

For a broad set of medical conditions

- Breast cancer
- Prostate cancer
- Lung cancer
- Colorectal cancer
- Hip osteoarthritis
- Cerebrovascular accident (stroke)
- Chronic kidney disease
- Pregnancy and birth care
- Rheumatoid Arthritis
- Coronary Artery Disease
- Inflammatory Bowel Disease
- Diabetes
- Hip fracture
- Knee Osteoarthritis
- Frail elderly

Future >20



Multi-disciplinary improvement teams for each condition in each hospital, involving patients

All relevant disciplines are represented in each team:

- E.g. Surgeon, Pathologist, Oncologist, Pharmacist
- E.g. Nurse, Nurse practitioner, specialized nursing
- 1-2 patients

Supported by

- Project leader
- Data manager and analyst



Example 1: standardised scorecard Breast Cancer



Category	ID	Indicator																		
Outcomes	U1	5-year survival, uncorrected																		
	U2	Reoperation due to positive margins (%)																		
	U3	Reoperation after postsurgical complications (%)																		
	U4	Non-surgical complications (% , per type)																		
	U5	PROMs: Quality of life (including pain, functioning)																		
	U6	PROMs: Specific conditions resulting from treatment																		
	U7	Local or regional recurrence within 5 years (%)																		
Costs	K1	# treatment days per patient / Length of Stay																		
	K2	% outpatient care for breast saving treatment																		
	K3	OR-time per patiënt																		
	K4	# outpatient visits per patient																		
	K5	# diagnostic activities (MRI, PET, CT) per patient																		
	K6	Use of expensive medications																		
Processes	P1	# days from referral to 1st outpatient visit																		
	P2	# days from 1st outpatient visit to diagnosis																		
	P3	# days from diagnosis to treatment plan																		
	P4	# days from treatment plan to start treatment																		
	P5	% patients informed about consequences of treatment																		
	P6	% patients assigned with one point of contact																		

Data shows only small differences in 5-year survival rate between hospitals

Example 1: standardised scorecard Breast Cancer



Category	ID	Indicator							
Outcomes	U1	5-year survival, uncorrected							*
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However, significant differences in costs:

- Ranges in diagnostic costs from €400-€900 per patient
- Ranges in certain medication costs from €2000-€5000 per patient

Example 1: standardised scorecard Breast Cancer

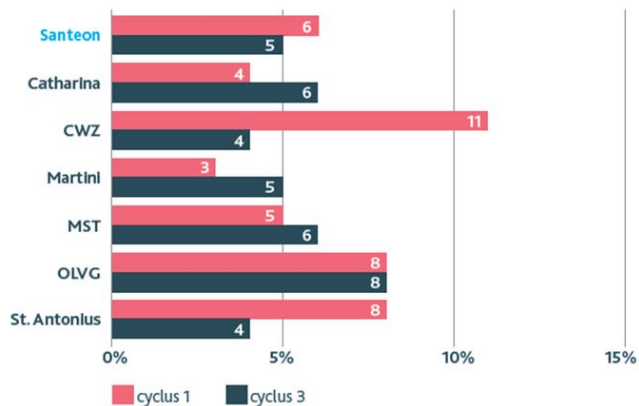


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And variation in other outcomes than survival: We measured differences in reoperation rates after positive margins: Ranging from 3-11%

Santeon achieved a reduction of more than 15% in reoperation rates after positive margins

Patients who underwent a repeat operation after a positive margin in a breast-conserving operation



Cycle 1: Breast cancer patients diagnosed at a Santeon hospital in 2014/2015

Cycle 3: Breast cancer patients diagnosed at a Santeon hospital in 2016

Source: NBCA from IKNL

- Technical: Started using ultrasound during operations if tumor is visible on ultrasound (adopted from other Santeon hospital)
- Awareness: Every member of the team was made aware of the higher re-operation rate. Now continuous focus on this effort (part of the MDO discussion)
- Standardization: Differences in interpretation of margins by pathologists across hospitals

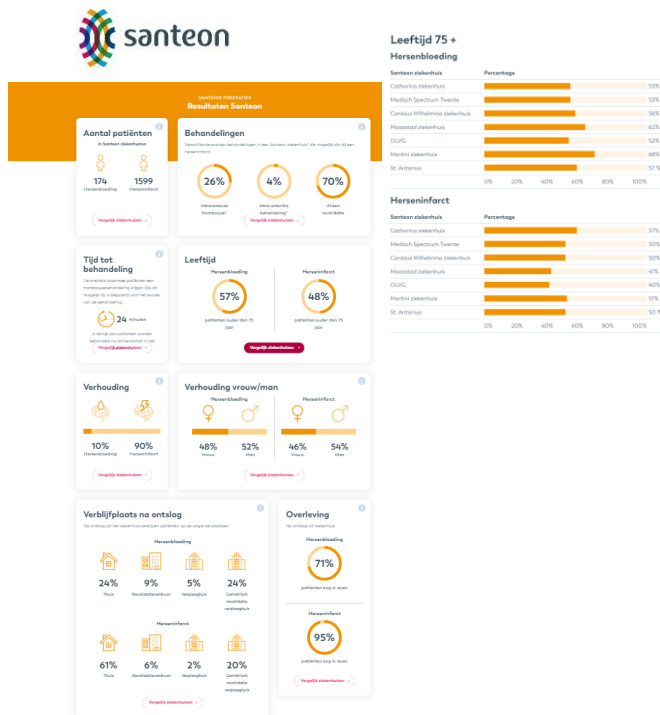
Transparency in outcomes achieved

www.santeon.nl

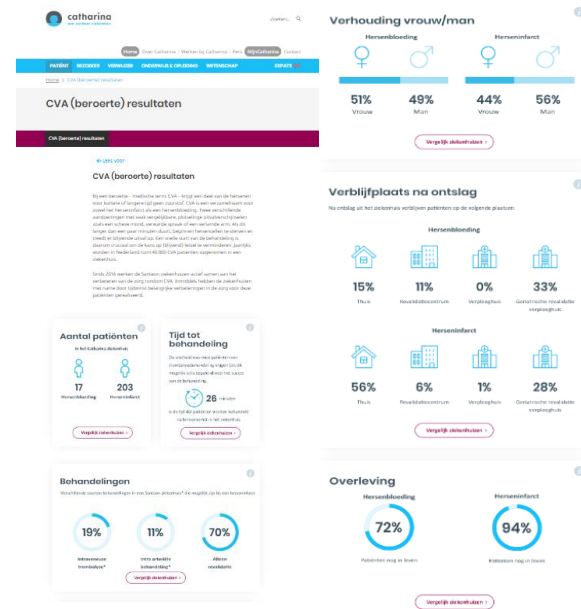
2013: started publications



2019: Online infographics santeon.nl



2020: Decision support instruments



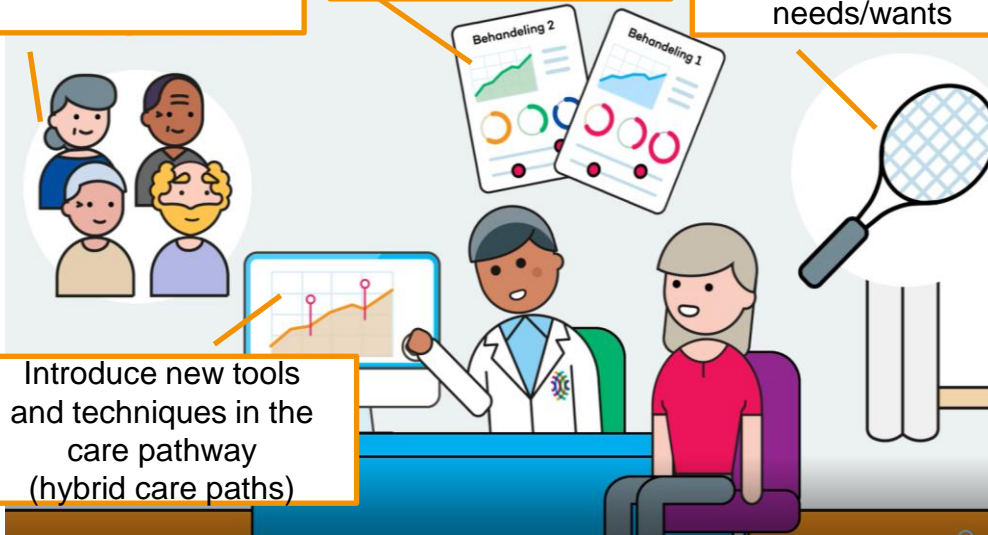
Approach: Measure outcomes, costs, practice variation and focus on value based transformation

Measure and optimize outcomes

Standardize AND personalize treatment options

Understand and discuss patient preferences, their needs/wants

Introduce new tools and techniques in the care pathway (hybrid care paths)

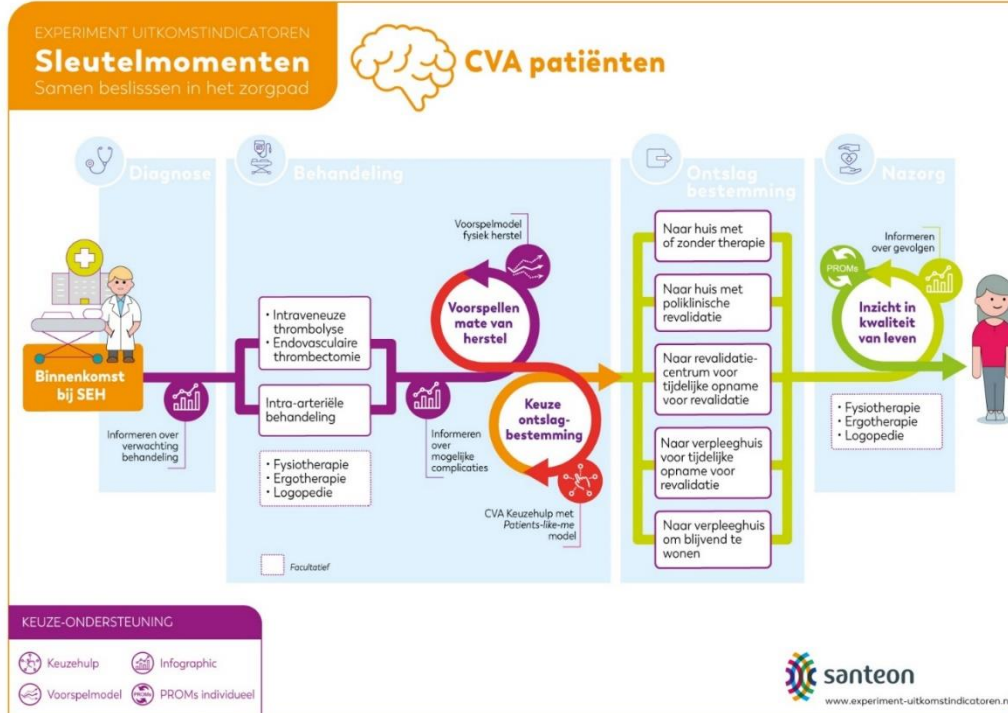


The approach: Value based **transformation**, not just new tools and techniques, but different behaviors and culture:

- We focus on *personalized AND standardized* high-value care:
 - Make outcome information **REAL** for patients and care professionals in the care setting
 - Develop tangible tools supporting shared decision making
- Introduce new ways of working, train doctors and nurses in decision talks with patients focused on quality of life
- Introduce hybrid care pathways leveraging new technologies to deliver care outside the hospital setting
 - Increased job satisfaction
 - More time for those patients who really need it
 - Right information about the right patient at the right time

Identify 'key moments' along the pathway: Reduce variation, Shared decision making, hybrid care delivery

Develop tangible tools and interventions at key moments along the care pathway



But remember:

**Old organization + new technology
= expensive old organization**

We need to go for a value based
transformation of health care:
Change behaviors, culture

Patients' like me dashboard

Patiënten zoals ik



Welkom op dit 'Patiënten-zoals-ik' hulpmiddel.

Hier delen we met u wat de ervaring was van vrouwen, 1 jaar na hun operatie voor borstkanker.

Met deze informatie hopen we u een beeld te geven van de mogelijke gevolgen van de behandeling.

Dit kan u helpen met het maken van een behandelkeuze.

Start

Predict 2.0



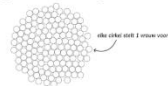
Patiënten zoals ik



Wat hebben we gedaan

We hebben 232 vrouwen die, net als u, een borstsparende operatie én radiotherapie hebben ondergaan, gevraagd hoe ze zich voelden 1 jaar na hun operatie.

139 van deze vrouwen kreeg naast de operatie en radiotherapie geen andere behandeling



elke cirkel staat 1 vrouw voor

93 van deze vrouwen onderging naast de operatie en radiotherapie ook hormonale therapie



Volgende

Patiënten zoals ik



Hoe tonen we de antwoorden

Alle antwoorden van de vrouwen hebben we samengevat en geven we weer met bolletjes, waarbij elk bolletje een vrouw voorstelt.

Per vraag gaven vrouwen aan of ze iets: **nogal/heel erg**, **een beetje**, of helemaal niet erg vonden. De bolletjes hebben we daarom ook deze kleuren gegeven.



nogal/heel erg



een beetje



helemaal niet

Ga door naar inzichten

Vergelijk behandelingen

Algemeen voorkomende klachten

Zelf verkennen

Moe & slapen



Zorgen & spanning



Inspanning



Pijn & gevoeligheid



Zelfbeeld



Seksualiteit



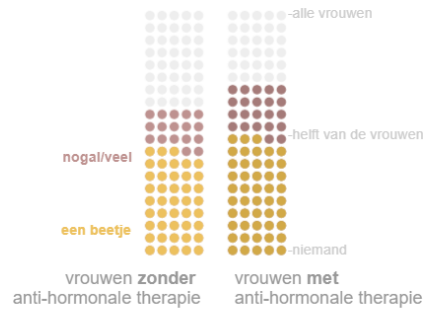
Geheugen



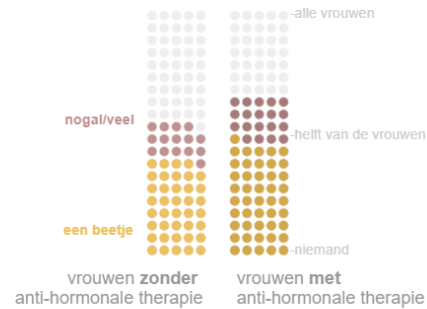
Werk en dagelijkse bezigheden



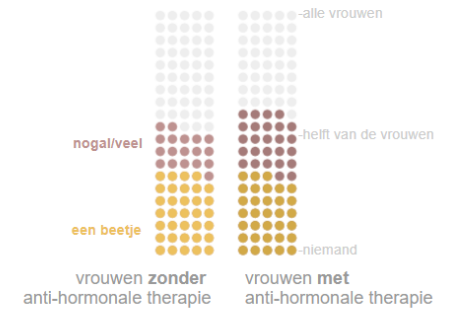
Was u gedurende de afgelopen week moe?



Had u gedurende de afgelopen week behoefte om te rusten?



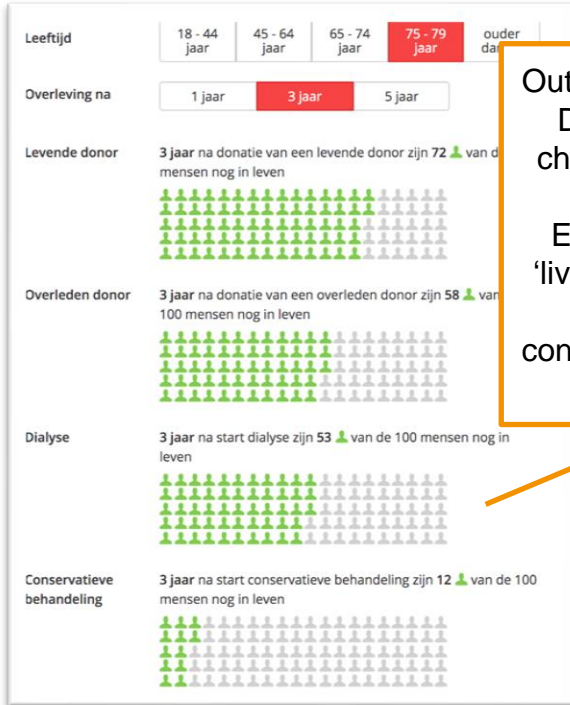
Heeft u gedurende de afgelopen week moeite met slapen gehad?



Examples of impact

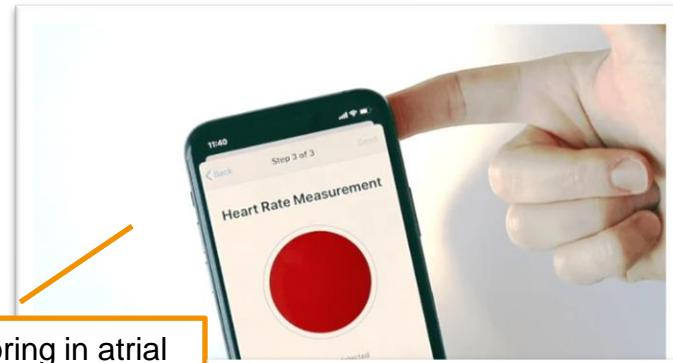
Outcome-based Shared Decision Making in chronic kidney failure:

Enabling patients to 'live a normal life', and leading to more conservative treatments at lower cost



Home monitoring in atrial fibrillation (AF) and patients-like-me dashboard:

More self management, and reduction in number of outpatient visits

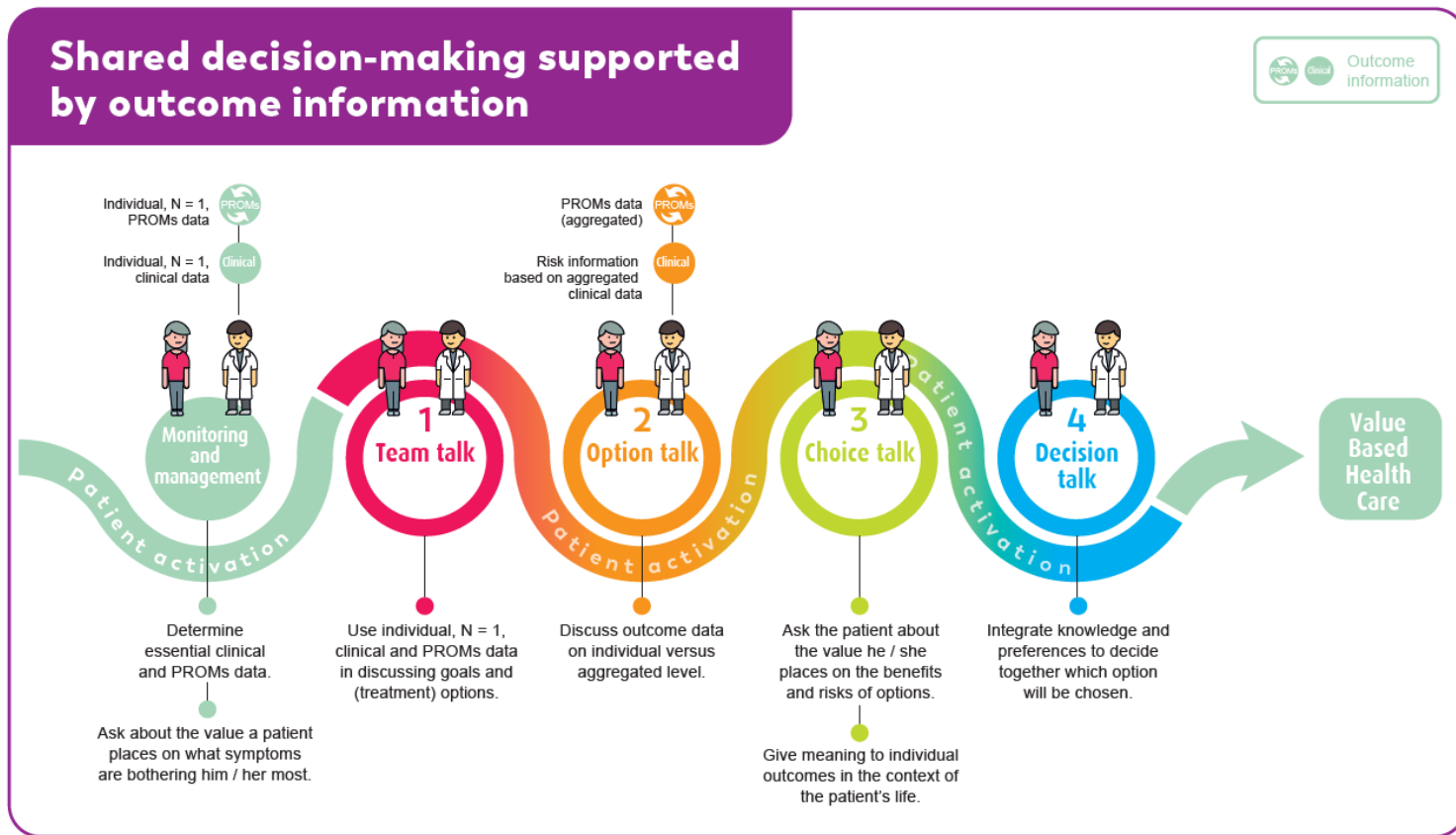


Virtual Fracture Care - For 15 uncomplicated fractures using remote monitoring app:

Leading to -92% repeat-outpatient visits and -72% imaging requests



Training for healthcare professionals in shared-decision making



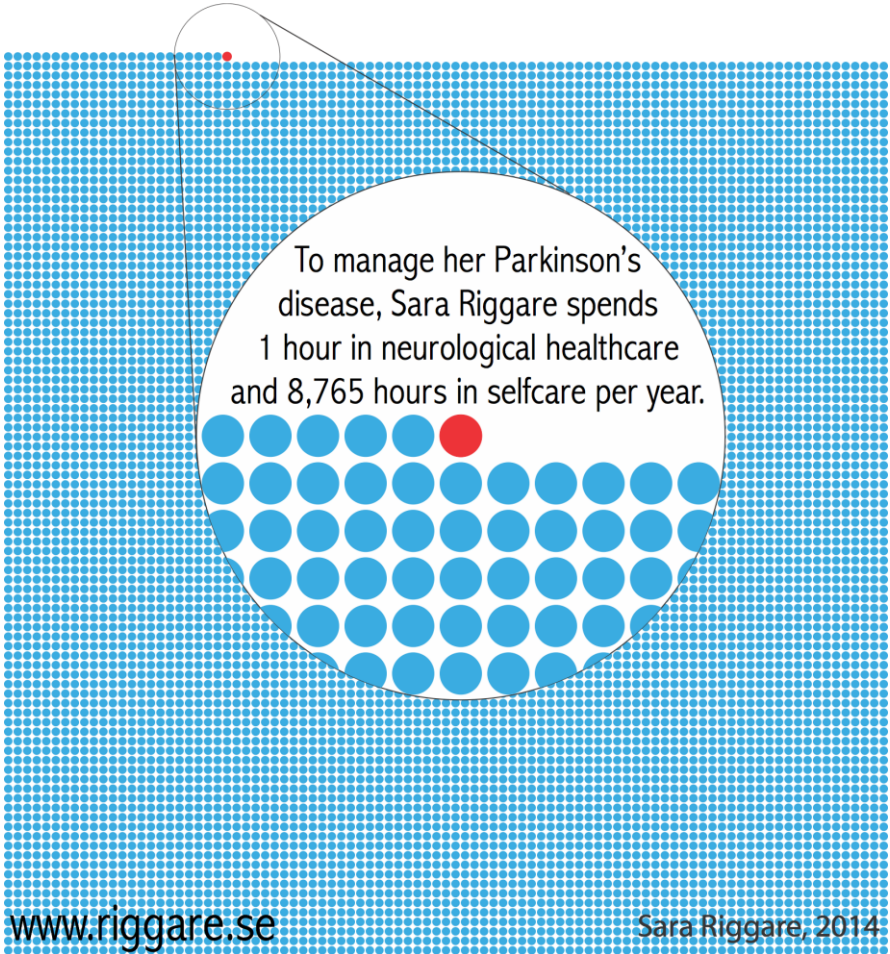
Approach to high-value and equitable care evolving rapidly: Focus on *value-driven digital transformation* of care. Requiring a radically different way of working

Key principles

- From **home** (nearby) if possible, in the **hospital** (remote) when needed
- Self monitoring and self management if possible, 1-on-1 **consultations** when needed
- **Virtual** if possible, **face2face** when needed
- 24/7 **support** available for the patient

This requires a different way of working
Care pathways become 'hybrid'

This will require a lot from our care professionals



To manage her Parkinson's disease, Sara Riggare spends 1 hour in neurological healthcare and 8,765 hours in selfcare per year.



Introduction ***Zorg bij jou***

Zorg bij jou brings patients and healthcare professionals together. For care where and when it is needed: digitally and at home if possible, on site if necessary.

Zorg bij jou / virtual care



- Digital care requires a real **transformation journey**, not just hardware / software implementation
- It requires a different way of working, with different skills and capacity from doctors, nurses, other care professionals
- Care takes a hybrid form, which provides opportunities:
 - Increased job satisfaction?
 - More time for those patients who really need it
 - Right information about the right patient at the right time



Why? We need to radically reorganise healthcare



Increasing demand for care



Increasing shortage of healthcare professionals



Increasing difficulties to keep healthcare affordable, accessible and ensure quality of care



Hybrid care models are essential to organize care differently



Zorg bij jou offers digital healthcare services on a national scale, for and by healthcare professionals and non-profit basis

Open platform for hybrid care from all healthcare providers such as GPs, pharmacies, home care and hospitals.



Works on a not-for-profit basis, as a social facility for providing hybrid care to patients



Medical Service Centre forms the heart, operating in several regional centres working together as one virtual organisation.



Works with multiple healthcare applications from multiple providers via one platform.



Core elements of *Zorg bij jou*



Development of hybrid care pathways

With the Santeon hospitals we develop hybrid care paths and the necessary care products and services for you.

As a next step, we will expand this to healthcare providers outside Santeon, such as other hospitals, general practitioners and nursing homes.



Medical Service Center (MSC)

This virtual care center from the Santeon hospitals keeps track of the patient's measurements, receives questions and signals and initiates follow-up steps based on the protocol.

Where necessary, the MSC coordinates with – or escalates to – the responsible practitioner.



Right information in the right place

For the hybrid healthcare services from the MSC, we are building an IT platform that provides the right information at a national level, in the right place and for the right (care) professional.



One digital front door

We are gradually working towards one digital front door and 24/7 support for hybrid care from *Zorg bij jou*, both in a Santeon context and in the region, for a clear and seamless patient experience.

How it works: Remote monitoring

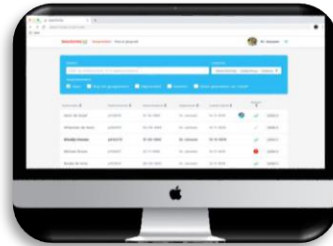


Measuring moments

Patients take their measurements at fixed times during the week or complete questionnaires and submit them via an app (phone or computer).

Measurements are specific per care path.

Patient engages in training and coaching modules, focus on self management



Threshold values

For each patient (group) it is set when a notification appears in the app.

For example with:

- Actions
- Reminders
- Question about a measurement



Reviewing notifications, alerts, messages

Messages are reviewed at the Medical Service Center at set times during the week .

The frequency depends on the care path.



Follow up on notifications

A notification is initially followed up by the healthcare provider in the MSC. If necessary, there is contact/consultation with the practitioner.

Actions are for example:

- Message through chat
- (Video) calling
- Repeat measurement

The heart of Zorg bij jou

From local home monitoring centers to one virtual medical service center (MSC)

- Zorg bij jou focuses on central monitoring and following up on health signals via one (virtual) medical service center (MSC).
- This is an independently functioning virtual center with an interoperable IT platform created by and for healthcare providers
- MSC employees, depending on their role/function, have access to the necessary information. The right information for the right professional – current and complete.



New way of working is of value to all stakeholders



Patients

- the right care where and when it is needed;
- patient at the helm: more control
- improved care through collaboration between the various healthcare providers.



Healthcare providers

- more time for care tasks and treatment of patients who need it, because they can outsource standard (care) tasks.



Healthcare providers

- Better use of (scarce) capacity by joining forces and working together more;
- Zorg bij jou helps to realize hybrid care, also for smaller-scale healthcare providers



Health insurers

- Lower healthcare costs per patient because healthcare is organized more efficiently
- Thanks to digital monitoring, a worsening of symptoms is identified in a timely manner, intervention is taken earlier and admissions are prevented more often.



Society

- Maintaining affordable, accessible good quality care
- Data from digital healthcare helps scientific research and can guide (policy decisions)
- Less CO2 emissions through less travel

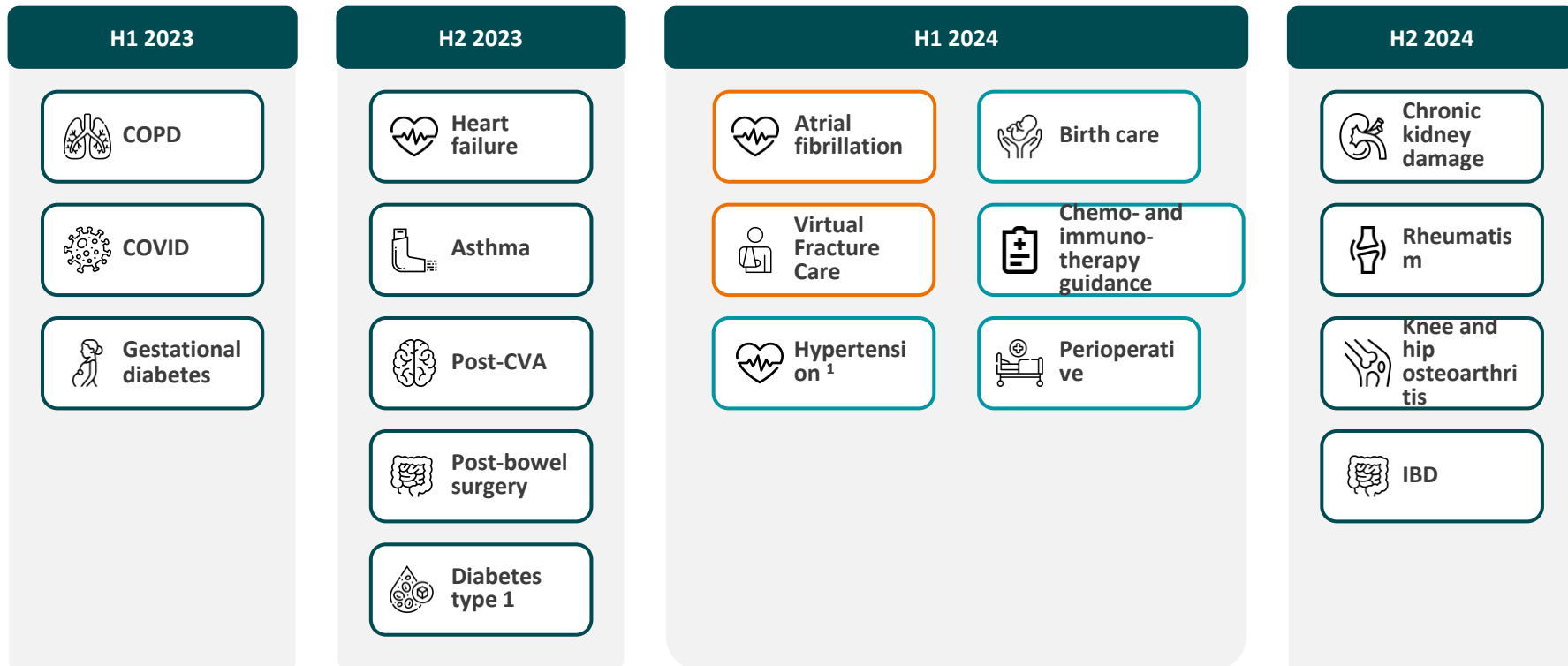


Medical service center employees

- The flexible and hybrid way of working enables a better work-life balance;
- Providing hybrid care offers career prospects in an innovative environment.

Care pathways | Eight hybrid care pathways will be implemented in 2023; another ten care pathways will be developed in 2024

Care pathways per moment of (intended) implementation



Lessons we learned

- Create a common understanding of **value** and measure it. Keep the pace towards transparency
- Start small, be pragmatic, but also ensure long-term C-suite commitment
- Build a safe learning environment: Learn, don't judge
- Have medical professionals take the lead, and provide them with the right level of support. Work towards fitting organizational model [change in organization is needed]
- It's about the patient — and with the patient
- Innovate using new (data) techniques, new process metrics, optimized care pathways
- Get rid of 'not invented here' syndrome
- It's hard work – data-driven improvement takes time to learn – but it's absolutely worth it

Want to learn more?

NEJM
Catalyst

Innovations in Care Delivery

IN DEPTH

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

Noel Engels, MD, Willem Jan W. Bos, MD, PhD,
Anne de Bruijn, MSc, Roald van Leeuwen, MSc,
Nardo J. M. van der Meer, MD, PhD, MBA,
Cornelia F. van Uden-Kraan, PhD, Pieter de Bey, MBA, MSc, Paul B. van der Nat, PhD

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Despite growing global support for value-based health care (VBHC), there is no consensus



Santeon is a collaboration between:

- Canisius Wilhelmina Ziekenhuis in Nijmegen
- Catharina Ziekenhuis in Eindhoven
- Maasstad Ziekenhuis in Rotterdam
- Martini Ziekenhuis in Groningen
- Medisch Spectrum Twente in Enschede
- OLVG in Amsterdam
- St. Antonius Ziekenhuis in Utrecht/Nieuwegein

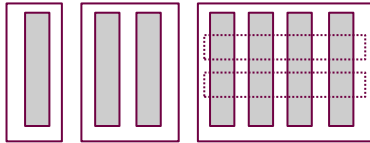
THE IPU: GREAT IDEA, BUT DOES IT EXIST?



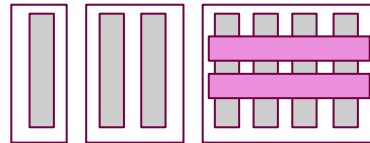
1. Organize care around a medical condition
2. Health provided by a multidisciplinary team
3. Care provided on the same location for a specific patient group
4. Full responsibility for the entire care delivery chain
5. Formal leadership (medical specialist and healthcare provider)
6. Responsibility for logistics and finance (P&L)
7. Measuring outcomes, processes, satisfaction and costs
8. Accountability for outcomes and costs

MORE FLAVOURS EXIST

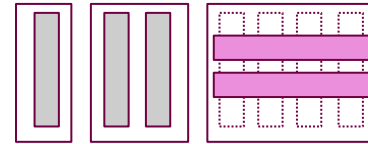
1: Project team



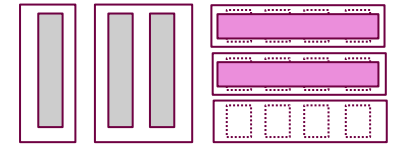
3: Matrix organization



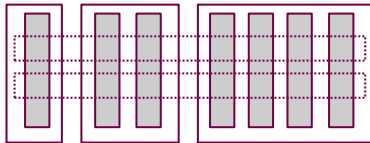
5: IPU



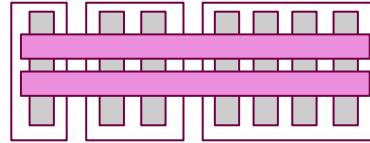
7: Independent clinics



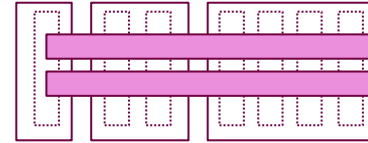
2: Project team + care chain



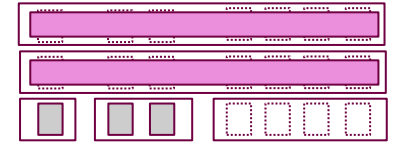
4: Matrix + care chain



6: IPU + care chain



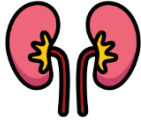
8: Indep. clinics + care chain



Archetypen Aandoeningsgerichte Organisaties,
Linnean Initiatief, Koomans M et al. (2021)



EVALUATION OF 8 IMPROVEMENT TEAMS



Kidney failure



Traumageriatric care



Breast cancer



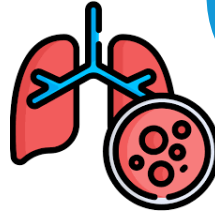
Hip artrosis



Prostate cancer



Sleep care

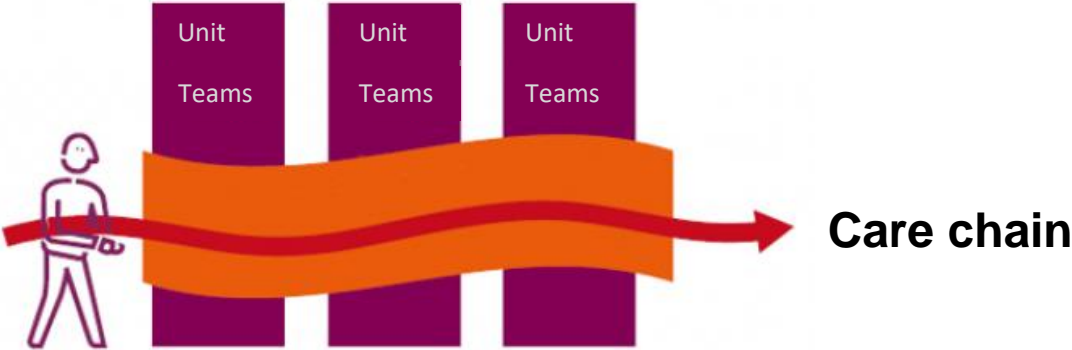
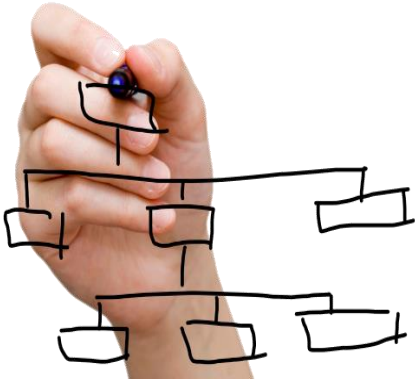


Lung cancer



Colon cancer

NEXT STEP: ORGANIZATIONAL STRUCTURE



CARE CHAINS

Care chains are set up at St. Antonius for 10 medical conditions.

Care chains = improvement teams + :

1. full responsibility for quality of care
2. everyone involved in the care for the patient group belongs to the care chain
3. Daily board of a medical leader, nurse leader, and head (management)
4. Daily board has time available (4hrs/wk)
5. Continuous experimenting (to become a successful care chain)
6. Formal link to the hierarchical (vertical) units/departments

CARE CHAINS: PRIDE

