

Medtronic

Integrated Health SolutionsSM

Case study: >15% more
patients treated with
no increase in resources

St. Antonius, Netherlands



Overview

A leading Dutch hospital **gained 30 minutes per day per CathLab** in just five months, enabling them **to treat >15 percent more patients**.*

This was achieved with constant resources and corresponds to a value gain in CathLab use of **\$500,000** over three years.**

* Coronary angiography and coronary angioplasty procedures only

** Based on average CathLab cost per hour. Source: St Antonius hospital

The challenge

St. Antonius hospital Nieuwegein is a leading hospital in the Netherlands, recognised as a centre of expertise in cardiology and cardiothoracic surgery, lung conditions, and cancer. With 850 beds, it employs more than 500 staff members, and draws thousands of patients from all parts of the Netherlands each year.

The hospital's heart centre aspires to be the leading and most innovative heart centre in the country. Already, more than 6,500 procedures take place in their five Catheterisation Laboratories (CathLabs) yearly. Moreover, cardiologists working in the heart centre are internationally renowned opinion leaders.

The heart centre team was facing increasing competition and cost-pressure on the one hand, and a growing waiting list on the other. To fulfill its aspiration and to care for more patients, they needed to do more with the same budget.

In that context, the heart centre was eager to:



Optimise daily operations to free up capacity and reduce waiting lists



Improve quality and patient experience



Treat more patients with no increase in resources

The solution

Medtronic Integrated Health Solutions (IHS) created a tailored solution to optimize non-clinical operations in the heart centre's outpatient clinic, CathLabs, wards and supporting services while also bringing them the latest cardiac technologies.

Our five-and a half-year partnership, which started in July 2014, includes collaborating with the hospital staff to execute a set of projects aimed at improving cost efficiency, quality of care, and patient experience.

Our approach

A team of cardiologists, hospital staff and IHS consultants worked together. We applied a Lean approach to identify areas of enhancement, implement optimized processes and create a culture of continuous improvement.



We set-up a cross-functional project team

- Brought together CathLab management and staff, cardiologists and planners
- Engaged staff from the ward, knowing from experience that optimising CathLab utilisation often requires a joint effort



We quantified baseline and set goals

- Initiated data collection to quantify asset and resource utilisation and waste
- Used our proprietary benchmark database to compare performance with peers
- Set SMART (Specific, Measurable, Achievable, Realistic and Time-bound) goals based on benchmarking results



We performed a thorough root-cause analysis

- Facilitated Value Stream Mapping workshops to collect qualitative insights
- Created fishbone diagrams to identify sources of waste



We created an environment of continuous improvement

- Put dashboards in place to facilitate the Plan-Do-Check-Act (PDCA) improvement cycle
- Trained management and staff to earn their Lean Yellow Belt certification
- Installed improvement boards



We prioritised improvement projects

- Used a prioritisation matrix that measured the effort required against the impact expected
- Improved planning (e.g. set up full-day shifts for cardiologists)
- Enhanced timeliness of patients' transportation from ward to CathLab and vice-versa
- Organised lectures to increase knowledge of patient preparation requirements per type of procedure
- Improved on-time start of first procedure of the day (e.g. rescheduled lectures, enabling staff to be at the CathLab on time)

The impact

Two years into the partnership, we have created

overall \$1.7 m of economic value together

including efficiency savings in the CathLabs and outpatient clinic as well as better service for patients.

Reducing waste and optimizing the use of three of the five CathLabs was a priority. Indeed through a five-month project, the team achieved a reduction in waste by more than 30 minutes per day per CathLab:



Late starts were reduced by

18 minutes

per day



Turnover time between patients was reduced by

15 minutes

per day

As a result, the heart centre has managed to perform more than **15 percent* additional procedures** with the same staff, the same number of CathLabs, and the same opening hours. The value created through the optimization of CathLab use alone is estimated at more than **\$170,000 per year.****

* Coronary angiography and coronary angioplasty procedures only

** Based on average CathLab cost per hour. Source: St Antonius hospital



In summary:

The St. Antonius heart centre can now serve more patients, with the same level of resources, and ultimately, deliver better quality care.



What the hospital staff say:



"Our renewed way of working allows us to help more patients, with the same resources and working hours."

Cardiologist



"IHS helped us improve aspects of our operational processes that we had been struggling with for quite a long period."

CathLab Manager



For further reading

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About Medtronic IHS

Integrated Health SolutionsSM builds on Medtronic's unique combination of capital resources, process optimization expertise and therapy knowledge. In cooperation with medical institutions, IHS develops innovative services and solutions to improve efficiency, reduce costs, facilitate patients' access to different types of treatment, and improve outcomes.

Learn more about our solutions by visiting our [website](#), reach out to your Medtronic contact or email us at: integratedhealthsolutions@medtronic.com

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