

**Medtronic**

Integrated Health Solutions<sup>SM</sup>

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

St. Antonius, Netherlands



# Overview

In 2015, a leading Dutch hospital **gained 30 minutes per day per Cath Lab** 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 Cath Lab use of **\$500,000** over three years.\*\*

\* Coronary angiography and coronary angioplasty procedures only

\*\* Based on average Cath Lab 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 employed more than 500 staff members, and attracted thousands of patients from all parts of the Netherlands each year.

The hospital's Heart Center aspired to be the leading and most innovative Heart Center in the country. In 2015, more than 6,500 procedures took place in their five Catheterisation Laboratories (Cath Labs) yearly. Moreover, cardiologists working in the Heart Center are internationally renowned opinion leaders.

The Heart Center 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 Center was eager to:



Optimize 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 Center's** outpatient clinic, **Cath Labs**, wards and supporting services while also bringing them the latest cardiac technologies.

Our five-and a half-year partnership, which started in July 2014, included 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 Cath Lab management and staff, cardiologists and planners
- Engaged staff from the ward, knowing from experience that optimizing Cath Lab utilization often requires a joint effort



## We quantified baseline and set goals

- Initiated data collection to quantify asset and resource utilization 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 prioritization 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 Cath Lab and vice-versa
- Organized 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 Cath Lab on time)

# The impact

Two years into the partnership, we have created

## overall \$1.7m of economic value together

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

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



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 Center has managed to perform more than **15 percent\* additional procedures** with the same staff, the same number of Cath Labs, and the same opening hours. The value created through the optimization of Cath Lab use alone is estimated at more than **\$170,000 per year.\*\***

\*Coronary angiography and coronary angioplasty procedures only

\*\* Based on average Cath Lab cost per hour. Source: St Antonius hospital



## In summary:

The St. Antonius Heart Center 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."

**Cath Lab Manager**



## For further reading

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## About Medtronic IHS

Integrated Health Solutions<sup>SM</sup> 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](mailto:integratedhealthsolutions@medtronic.com)

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