



Case study: Mater Private Hospital, Dublin, Ireland

Optimizing clinical operations through Digital Workflow modeling

Leading Irish hospital used a digital twin of their
radiology department to transform care delivery

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Modeling layout scenarios to optimize care delivery

Change is constant in healthcare delivery. Building long-term success takes insight, resources, and courage. You need a partner that enables you to move beyond reacting to change, and to anticipate and even drive change in healthcare. A partner that helps you innovate new services, strategies and solutions to create value for your stakeholders. Siemens Healthineers is that kind of partner, and Value Partnerships are how we help you meet your goals right now, next year, and further down the road.

Value Advisory Services offers a Digital Workflow excellence practice. This includes a powerful simulation tool for intelligent decision-making. We start by building a 3D computer model of your clinical environment.

This could encompass radiology, the emergency department, operating rooms, and any other facility that's a focus area for you. We then transform the model into a digital twin of your institution. How? By inputting your operational and financial data to simulate your actual everyday workflows.

The virtual replica of your work world enables us to test different operational scenarios and layouts. Workflow simulation is an excellent "what if" tool that predicts the operational and financial impact of any scenarios you want to explore. Realistic animations and quantitative reports enable you to evaluate options instantly and find your perfect solution to transform care delivery.

Improvements that previously took months or years of trial and error can now be achieved in a matter of days or weeks. Your digital twin creates a faster, simpler route to optimizing clinical operations, creating value for your stakeholders, and improving patient experience.



Digitalize healthcare and optimize your performance with a **digital twin** of your institution.

The customer

Engaging in a Digital Workflow program to embrace and anticipate change

The Mater Private Hospital (MPH) is one of the leading private hospitals in Dublin, Ireland. Founded in 1986, MPH's goal is to make its facilities the best place to receive care, to work and to practice medicine.



The challenge

Pursuing new efficiencies in operational workflow and care delivery

Management recognized a need for change in the radiology department. With growing patient demand, increasing clinical complexity, ageing infrastructure and lack of space, it was becoming harder than ever to deliver efficient patient care. Rapid advances in medical technology were underlining the need for equipment modernization. Perhaps most important of all, rising waiting times, interruptions and delays were having a negative impact on patient experience.

The approach

Digitalizing healthcare to generate actionable insights

To overcome these challenges, MPH set a goal to redesign the layout and infrastructure of the radiology department. They engaged Value Advisory Services to optimize care delivery and create more value using a digital twin of their radiology department.

Digital workflow optimization



Data analysis and assessment

Radiology information system (RIS) data was analyzed to build a picture of current radiology operations. At the same time, Value Advisory Services worked with the hospital's architects to review current layouts and identify potential improvements. A one-week on-site assessment was conducted, including workshops, stakeholder interviews, and process observation.

Digital twin of institution

Based on the outcomes of data analysis and assessment, a digital twin of the department was created (baseline model). This Facility Simulation program enables testing before costly real-world implementation.



Digital twin of institution:
3D computer model of your department and your actual operational data.

Scenario definition and simulation

Two assumption-led scenarios were modelled to explore changes in patient demand and complexity. Impacts of different scenarios were viewed, analyzed, and discussed by all stakeholders.

New Layout and improved infrastructure:

Finally a new layout and infrastructure were designed to deliver increased value:

- Optimized clinical processes
- Increased efficiency
- Improved patient and staff experience

The Outcome

Improving access to care and increasing workforce productivity

The Digital Workflow program gave MPH the actionable insights they needed to make informed decisions about facility design, processes, and workflows. Besides identifying the best way forward, management was able to check the operational impact of various solutions before implementation. It was the perfect springboard for change and transformation. Improving patient experience was high on MPH's agenda. Redesigning the patient changing facilities creates a more pleasant environment and shorter waiting time. In addition, optimized maneuvering areas improve the ability of healthcare workers to care for bedridden and wheelchair patients.

The Digital Workflow program pointed out the following improvement potentials for MPH:



Shorter wait times for patients:
a reduction of **13 minutes** for CT scans
and **25 minutes** for MRI



Faster patient turnaround (arrival to
departure) which **shrank to 28 minutes**
for CT scans and **34 minutes** for MRI.



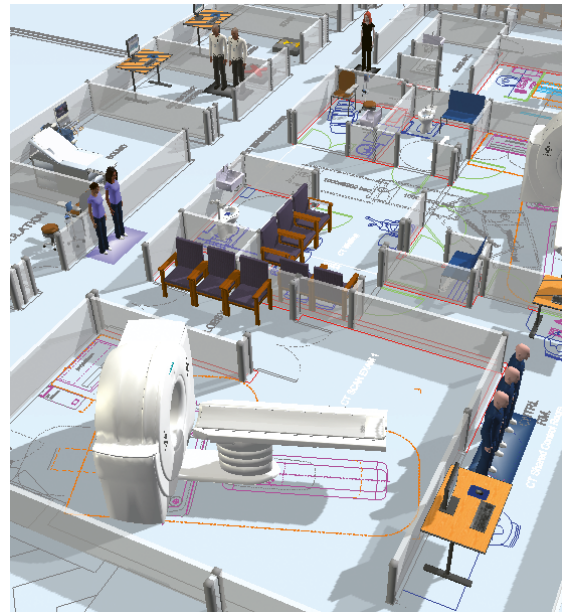
Increased equipment utilization –
MRI usage went up by **32 percent** and
CT usage went up by **26 percent**.



Lower staffing costs, including **50 minutes**
less MRI overtime pay per day, representing
up to **€9,500 annual savings**¹

This unlocks a wealth of benefits:

- Improved patient experience
- Increased workforce productivity
- Smarter resource allocation
- Enhanced clinical safety
- Optimized clinical operations
- Greater staff satisfaction



The future of healthcare is digital, and workflow simulation is already playing its part. The digital twin concept makes it easier than ever to identify opportunities to transform care delivery while maintaining quality and profitability.

¹ Assuming one medical assistant on duty; 365 operating days;
€26 per hour staffing cost (Source: payscale.com)

Voice of the customer

"The Siemens Healthineers team was excellent. They took the time to understand our challenges and the way we work. They really listened. And it was clear that they shared our commitment to delivering the best possible patient experience."

"It was amazing watching our 2D plans transform into 3D and then 4D reality. Thanks to our digital twin, we now have the best possible configuration for our department."

"With the increasing focus on value based radiology, where the patient experience matters as much as cost, it's reassuring to have this kind of insight at our fingertips."

"Thanks, Siemens Healthineers, for helping us integrate our patient flow with spatial design. Our patients are already noticing the difference."



Assoc. Prof Paddy Gilligan,
Chief Physicist & Registered
Radiation Protection Advisor,
Diagnostic Imaging Department
Mater Private Hospital, Dublin,
Ireland

Do you want to use a digital twin of your institution
in order to optimize you operations?

Get in contact:



siemens-healthineers.com/digital-and-transformation



eshq.team@siemens-healthineers.com

About Value Partnerships

Siemens Healthineers Value Partnerships are long-term, performance-oriented, collaborative engagements. We bring a combination of clinical insight, medical technology innovation, strategic vision, implementation expertise, and operational excellence to the table for you. As trusted partners, we help you formulate and achieve your strategic goals, increasing enterprise-wide value.

Value Partnerships drive value across your entire enterprise with focus on four domains: Technology, Operations, Workforce and Facility. Furthermore, together we enable breakthroughs through holistic and transformative initiatives such as Strategic Transformation and Digital Innovation.

Disclaimer

The products/features and/or service offerings (here mentioned) are not commercially available in all countries and/or for all modalities.

If the services are not marketed in countries due to regulatory or other reasons, the service offering cannot be guaranteed. Please contact your local Siemens Healthineers organization for more details.

The results described herein by customers of Siemens Healthineers were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.

Siemens Healthineers Headquarters

Siemens Healthineers AG
Siemensstr. 3
91301 Forchheim, Germany
Phone: +49 9191 18-0
[siemens-healthineers.com](https://www.siemens-healthineers.com)