

## Case study: University Medical Center Groningen, Netherlands

# SUPPORTING A RAPID-LEARNING HEALTHCARE SYSTEM



University Medical Center Groningen, Netherlands

University Medical Center Groningen (UMCG) is one of the largest hospitals in the Netherlands. The hospital provides world-class patient care and is engaged in cutting-edge scientific research and medical education. UMCG is a leading cancer center and will soon open a new state-of-the-art proton therapy center.



*“We have a vision that the clinical introduction of new and emerging radiation technologies should be more evidence-based. RayCare is the oncology information system that fully supports this new approach.”*

*Hans Langendijk, Chair of the Department of Radiation Oncology, UMCG*

UMCG is one of the first pioneers of RayCare<sup>®\*</sup>, RaySearch's next-generation oncology information system (OIS). UMCG and RaySearch have been developing and testing RayCare in close partnership, and the work includes integration with UMCG's EPIC medical records system. UMCG expects to be using RayCare clinically in 2018.

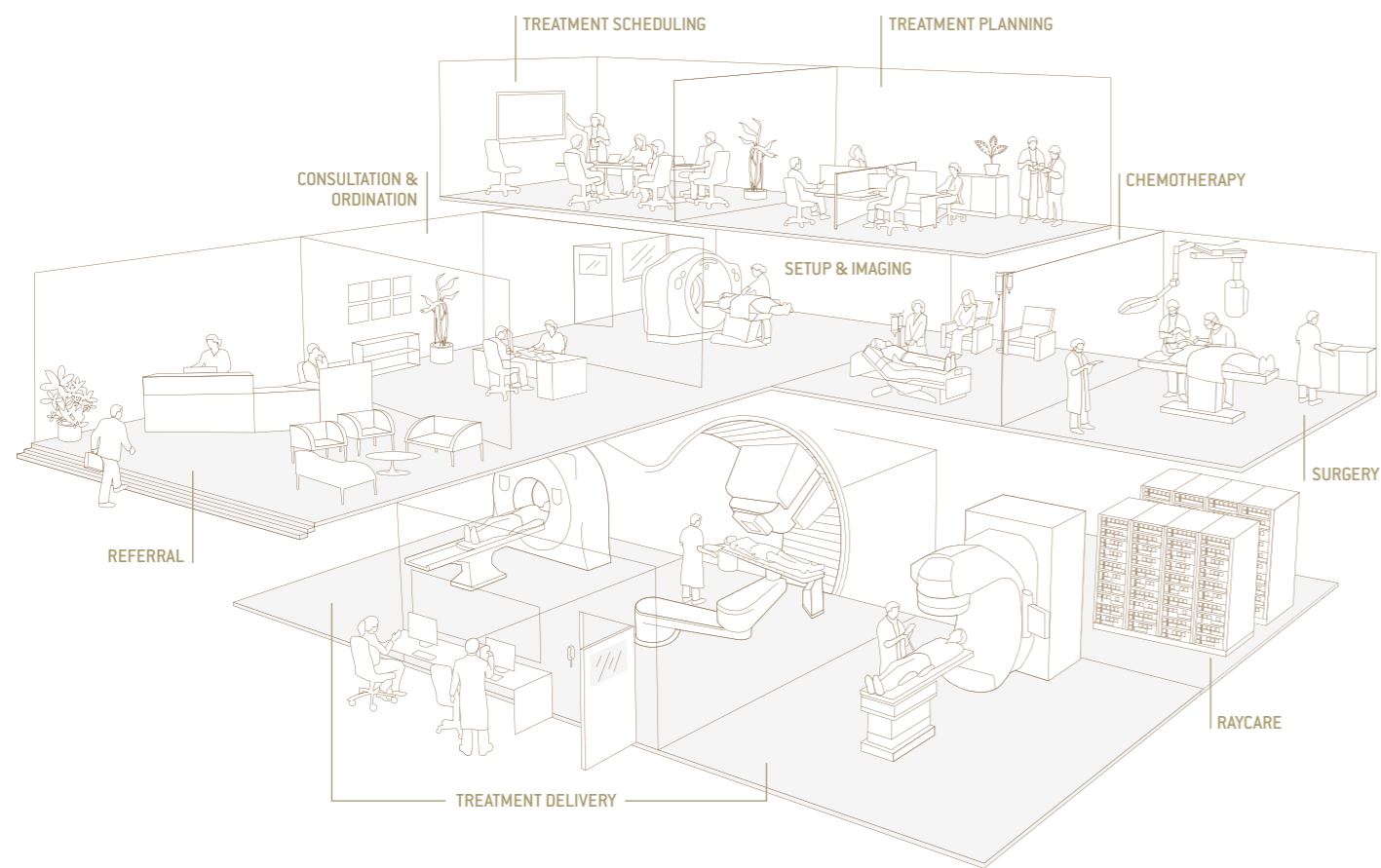
Professor Hans Langendijk, Chair of the Department of Radiation Oncology at UMCG, says the center has a vision that the clinical introduction of new and emerging radiation technologies should

be more evidence-based. “This requires a model-based approach within rapid-learning healthcare systems,” Langendijk says. “RayCare is the electronic oncology information system that fully supports this new approach. It will facilitate full integration of clinical practice and continuous learning through the development of user-friendly and efficient software.”

### Unifying data

Effective data handling is essential for a rapid-learning healthcare system, and this is a key strength of RayCare. “Currently,”

\*Regulatory clearance required in some markets



RayCare integrates the main oncology disciplines for the optimal patient-centered workflow

Langendijk says, “radiation oncology departments work with different software systems and interfaces. Consequently, not all patient information is accessible to everyone involved in the treatment process. This situation is inefficient and may jeopardize patient safety. In addition, learning systems will continuously improve radiotherapy quality and lead to better local control with fewer side effects, eventually resulting in more surviving patients with better quality of life. These benefits fit perfectly with the UMCG’s main research theme: Healthy Ageing.”

Langendijk adds that integration of rapid learning into routine clinical practice can

only be successful if it does not take much extra time from radiation oncologists and other healthcare providers. “Data capture, storage and extraction should be made easy and efficient. This is a major challenge and requires a multidisciplinary approach in the development, maintenance and continuous improvement of an OIS.”

#### Patient focus

Ricardo Franke, Staff Advisor Patient Logistics at UMCG and coordinator for the RayCare implementation, says RayCare will enable UMCG to work in a truly patient-centered way. “It brings everything together and will support treatment decision-making between photon and proton therapy. RayCare will



“RayCare will streamline workflows and support an integrated approach to treatment. It will give us one point of control over everything and remove many of the manual steps.”

Ricardo Franke, Staff Advisor Patient Logistics, UMCG

streamline workflows and support an integrated approach to treatment. There are huge advantages in making all kinds of data easily accessible in one system – both for treatment and for research. RayCare will give us one point of control over everything and remove many of the manual steps. The workflow engine creates tasks automatically, based on a wide variety of triggers. For example, when an MRI is sent to RayCare, a task is created automatically for the doctor to review the image. We will no longer have to create these tasks manually.”

#### Smooth workflow

Efficiency is key for a major center such as UMCG. “Many patients come from other facilities in Holland and Germany,” Franke says. “It’s essential to have the right information for the right patient at the right time, and we need to ensure short response times to referring institutes. When a patient is referred, we carry out a treatment planning comparison to determine whether proton therapy might be the better approach. Speed is of the essence, so we need a system that can automate procedures. RayCare will also be our booking agent and will take care of the whole process.”

Franke says the project is progressing well. “We are testing the latest prototype, refining functionality and working on the integration of RayCare and EPIC. This includes gathering

new usage stories regarding tumor board management and the PACS system, which will be integrated into RayCare. We wanted a central repository for all images, with the possibility to label and cross-reference for clarity. RaySearch created something that closely matches our needs; we will be able to send images from all kinds of systems and make them available in a highly structured way.”

#### Intuitive interface

The response from clinical staff at UMCG has been overwhelmingly positive. “When we’ve presented RayCare, there has almost been disbelief that this could be real!” Franke says. “People are delighted that it works so intuitively, matching the way they want to do things. It’s a breath of fresh air compared to most software systems they are used to working with.”

He adds that the process has been very smooth. “The relationship with RaySearch is a close collaboration. We have a partner who understands our needs and wishes and has the capability to translate them into new functionality. Many colleagues from different disciplines will use the system, so the requirements are diverse and wide-ranging. Our excellent ongoing communication with RaySearch is a key success factor.”

## ADVANCING CANCER TREATMENT

RaySearch is advancing cancer treatment through pioneering software. We believe software has unlimited potential, and that it is now the driving force for innovation in oncology. Medical science never stands still, and neither does RaySearch. We work in close cooperation with leading cancer centers to bring scientific advancements faster to the clinical world. Today, our solutions support thousands of clinics worldwide in the fight against cancer. By making oncology software faster, easier and more flexible, we enable better care for cancer patients worldwide.

And this is just the beginning.

For more information on RayStation  
or to see a demo please contact  
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