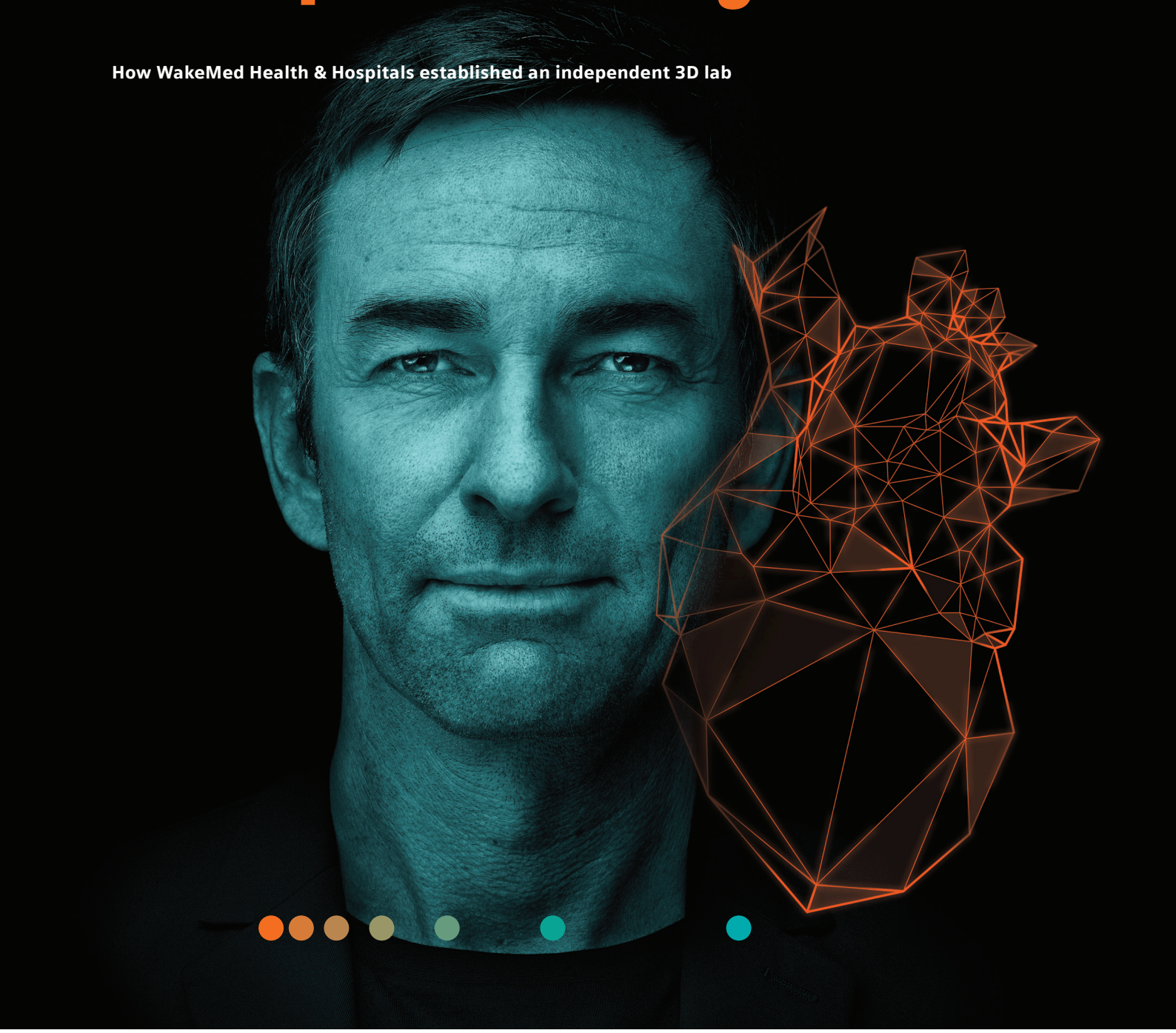
3D image post-processing cost containment and workforce strategies

How WakeMed Health & Hospitals established an independent 3D lab



SIEMENS Healthineers

WakeMed's in-house 3D lab strategy creates substantial cost savings

WakeMed Health & Hospitals, a regional health system in North Carolina, wanted to reduce system-wide costs, so each department was tasked with developing cost-containment ideas. The radiology department found that outsourcing 3D image post-processing had become an expensive and unsustainable strategy, costing nearly $1 million per year. Radiology realized by leveraging previous software investments and an existing Value Partnership with Siemens Healthineers, WakeMed could bring 3D image post-processing in-house instead.

The move is not only yielding nearly $400K in annual savings but has also positioned the organization to capitalize on new revenue opportunities and foster professional development within its workforce. This initiative exemplifies how healthcare organizations can achieve sustainable cost reductions while enhancing service quality and operational capabilities.

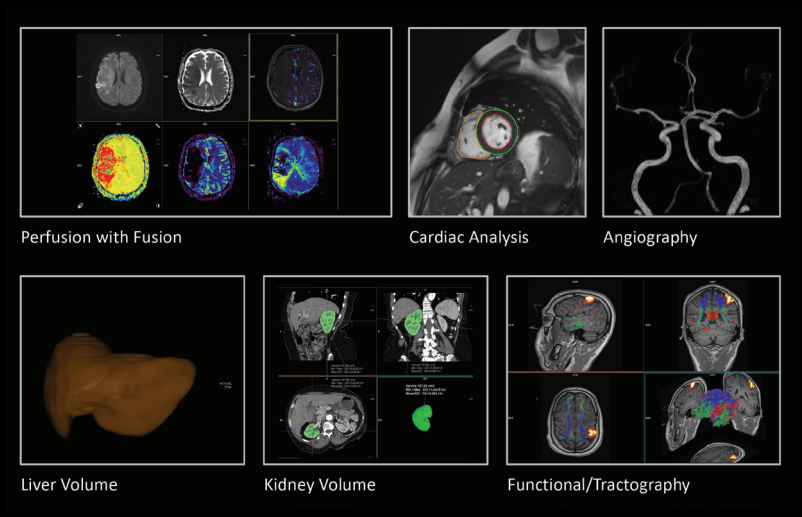
Developing a new cost-containment strategy

WakeMed had calculated that the best course of action was to establish a centralized in-house 3D image post-processing lab. Bringing the post-processing work in-house, even with hiring and training staff, was more cost-efficient than outsourcing to a third party. WakeMed reached out to Siemens Healthineers, a trusted partner, to help make this goal a reality. Together, they determined that WakeMed could leverage a previous investment in *syngo*.via software and lean on Siemens Healthineers to supplement the in-house team with additional experience, technology and workforce solutions to make the project successful.

3D image post-processing in radiology

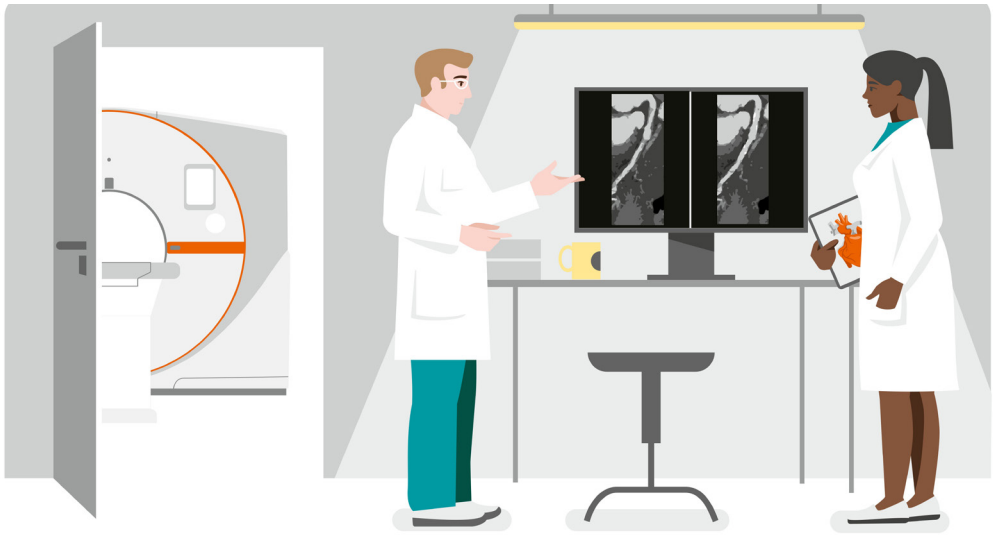
Manipulates radiographic images to derive additional qualitative or quantitative data and enhance diagnostic interpretation. For example:

- Restore, analyze and compress image
- Change image contrast
- Reduce image noise
- Enhance displayed image sharpness



Making the 3D image post-processing lab a reality

The development of WakeMed's new in-house 3D image post-processing lab was divided into phases to allow the work of the radiology department to continue as change was implemented.



In Phase 1, WakeMed consolidated image post-processing to *syngo*.via, the intelligent imaging software solution from Siemens Healthineers for multi-modality reading. Siemens Healthineers worked with WakeMed to optimize their *syngo*.via server for rapid results and to utilize automation to its fullest potential. By making this change, the team was able to make the best use of a software solution WakeMed already had while also using just one secure platform for the entire health system. The department could then produce more consistent results and faster turnaround times.

Meanwhile, the Siemens Healthineers team had a thorough onboarding process to see how WakeMed worked and better understand WakeMed's imaging needs. Onboarding included 3D protocol reviews with physicians, an overview of the types of exams frequently encountered and clinical guidelines for studies. The teams then determined where the 3D image post-processing lab would be best situated and developed processes to ensure timing was met and images would be delivered as expected.

To get the in-house 3D lab running, FlexForce® Techs, highly skilled CT and MR technologists selected and trained by Siemens Healthineers, were brought in. Utilizing *syngo*.via, the technologists tackled a variety of studies with speed and responsiveness, such as delivering critical code stroke CT studies within 30 minutes. They also provided exam-appropriate measurements using WakeMed's radiologists' protocols.

By Phase 2, WakeMed had hired their own 3D lab team leader and second-shift technologists. A FlexForce Coach led new staff through an intense, hands-on four-week training period where they learned how to use the *syngo*.via system and processes. Over time, the new staff became confident and comfortable in their positions, so FlexForce Tech coverage was gradually reduced to weeknights and weekends only, and then to weeknights only.

Meanwhile, WakeMed was able to hire and onboard the rest of the staff needed to run the lab themselves. The FlexForce Coach continued to support new staff training and remained on standby virtually.

In Phase 3, just 11 months after the project began, the new 3D image post-processing lab was fully functional and WakeMed was running it themselves. While the new lab is centrally located, the 3D lab team remotely performs 3D image post-processing for the entire hospital system. And if the WakeMed team ever needs additional coverage or support, the FlexForce team has a secure connection to fill gaps.

"In such a fast-paced, high-stress environment, having a tech in the lab to perform 3D post-processing has improved exam turnaround times as well as reduced the stress and workload on frontline workers, enabling them to put more focus on their patients."

—Dustin Allen, CT Supervisor, WakeMed Health & Hospitals, Raleigh Campus

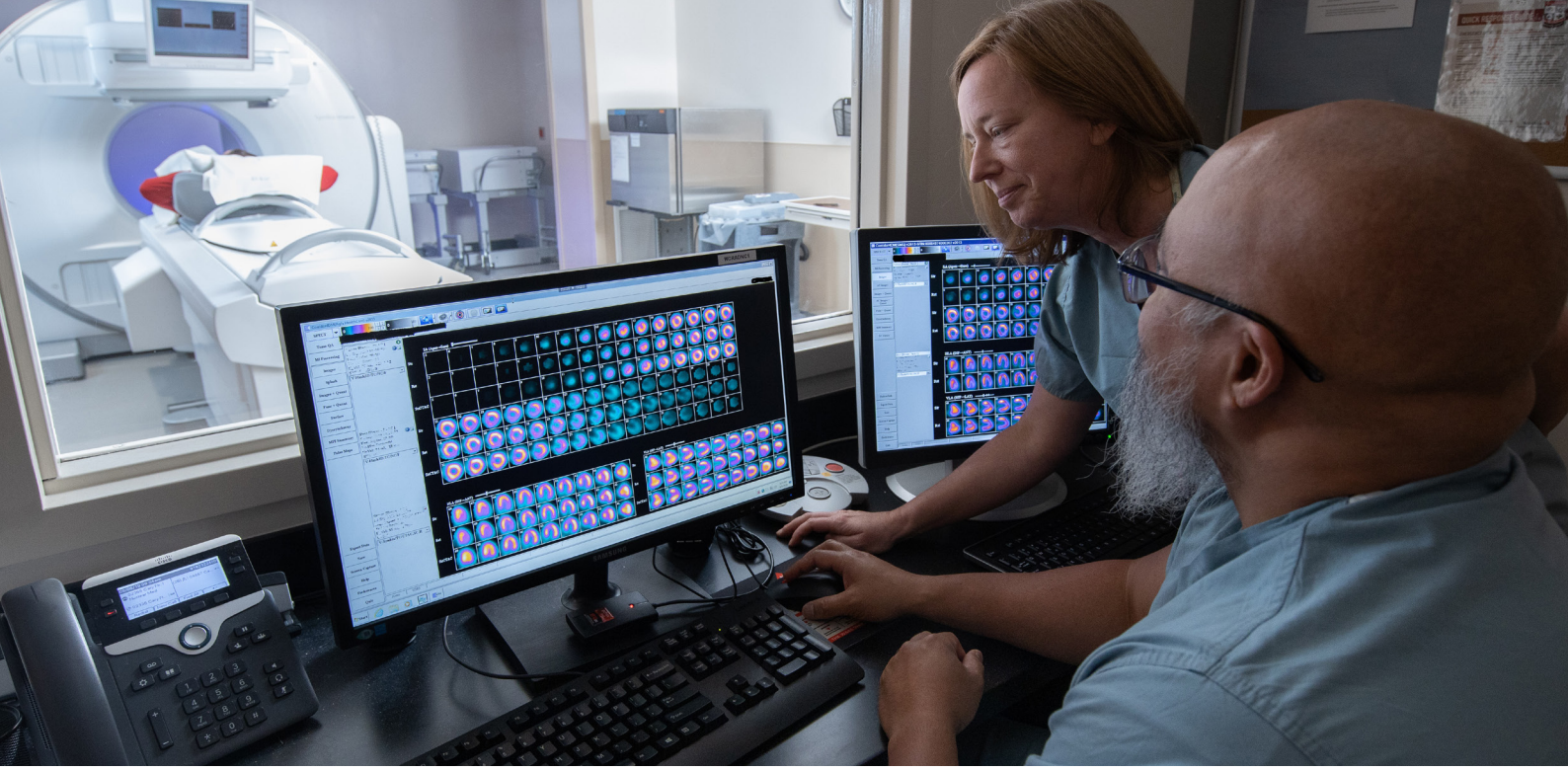
Value Partnerships

Value Partnerships with Siemens Healthineers are long-term, performance-driven relationships with hospitals and health systems based on a shared vision of the future of healthcare. These strategic partnerships address the industry's top challenges by jointly developing innovative, sustainable solutions that enable providers to transform the system of care, generate value and reach their full potential.

WakeMed Health & Hospitals entered into a Value Partnership with Siemens Healthineers in 2020. Together, the partners have embarked on a number of initiatives, including the launch of a hybrid OR and data-driven performance optimization programs. The effort to bring 3D image post-processing in-house was incorporated into the scope of the Value Partnership.

"When the opportunity came to enter a Value Partnership with Siemens Healthineers, it really helped transform how we look at relationships with traditional vendors. For us, it was just a perfect match at a perfect time to be innovative and transform the way our relationships with key partners are in helping us achieve our mission," said Donald R. Gintzig, president & CEO, WakeMed Health & Hospitals.

↗ Learn more



"Being a part of the 3D lab has given me a much more in-depth understanding of what the radiologists are interpreting and how these scans play a role in a patient's condition and prognosis."

—**Heather DuFault,** RT(R)(CT), Team Lead—3D lab, WakeMed Raleigh Campus

syngo.via software

- Integration with advanced tools and algorithms to adapt and simplify processes
- Multi-modality reading and fast 3D image results
- Optimized workflows through a single centralized hub

FlexForce Tech for 3D post-processing

- Highly skilled Siemens Healthineers-trained CT and MR technologists who:
  - Can operate remotely when needed
  - Seamlessly integrate into the workflow without interruption
  - Perform post-manipulation rendering, enhancing images to support clinical decision-making
  - Have expertise in OEM technology, including *syngo*.via software

FlexForce Coach

- Experienced Siemens Healthineers-trained coaches who:
  - Provide comprehensive staff development and performance consulting
  - Offer training tailored to the needs of each customer
- Drivers of sustainable results that are measured and reported to maximize success and add value

The results of a sustainable cost-containment solution

Bringing the lab in-house has enabled WakeMed to see cost savings immediately and long term:

- With the consolidation of post-processing systems to *syngo*.via alone, WakeMed will save $140,000 annually.
- Using FlexForce Techs to provide post-processing support and a FlexForce Coach to train new staff, WakeMed saved from $50K to $165K during different phases in the project.
- In total, WakeMed saved $390K during the 11-month transition period of bringing 3D image post-processing in-house.
- WakeMed now has a projected annual savings of almost $400K by having their own 3D lab versus outsourcing post-processing work.

New solution creates new opportunity

WakeMed has also benefited in other ways by bringing the 3D lab in-house:

- Potential to create a new revenue stream by offering their 3D image post-processing to other health systems
- Streamlined workflows and improved efficiency by optimizing use of staff and equipment
- Faster results through customized and automated processes for TAVR, EVAR, TEVAR and CTA coronary studies
- More consistent and higher-quality images
- More secure image processing and data sharing from using one software on the health system network
- A new clinical career pathway for staff to pursue beyond becoming team lead or manager

"The Siemens Healthineers 3D lab team has been very helpful with training and support and ensuring WakeMed is set up for success in our own 3D lab."

- Kelly McFarland, Executive Director of Imaging, WakeMed Health & Hospitals

In collaboration with Siemens Healthineers, WakeMed Health & Hospitals was able to implement lasting change for the health system. Through a tailored Education & Workforce solution, the team built an in-house 3D image post-processing lab that met the primary goal of achieving sustainable cost containment, contributing to system-wide cost-saving efforts. The project also enhanced efficiency and operational capabilities, opened a new revenue opportunity and created a staff development path. This success story exemplifies how partnering with Siemens Healthineers can enable health systems to drive meaningful and sustainable change.

Whether clinical, operational or financial, Siemens Healthineers provides customized Education & Workforce solutions for your unique needs. From supplementing your team to upskilling existing staff, Siemens Healthineers helps you empower your people and transform tomorrow.

↗ Learn more about Education & Workforce solutions

Siemens Healthineers AG (listed in Frankfurt, Germany: SHL) pioneers breakthroughs in healthcare. For everyone. Everywhere. As a leading medical technology company headquartered in Erlangen, Germany, Siemens Healthineers and its regional companies is continuously developing its product and service portfolio, with AI-supported applications and digital offerings that play an increasingly important role in the next generation of medical technology. These new applications will enhance the company's foundation in in-vitro diagnostics, image-guided therapy, in-vivo diagnostics, and innovative cancer care.

Siemens Healthineers also provides a range of services and solutions to enhance healthcare providers' ability to provide high-quality, efficient care. In fiscal 2021, which ended on September 30, 2021, Siemens Healthineers, which has approximately 66,000 employees worldwide, generated revenue of €18.0 billion and adjusted EBIT of €3.1 billion.

Further information is available at
↗ www.siemens-healthineers.com.

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Siemens Healthineers Headquarters
Siemens Healthineers AG
Siemensstr. 3
91301 Forchheim, Germany
siemens-healthineers.com

USA
Siemens Medical Solutions USA, Inc.
Healthcare
40 Liberty Boulevard
Malvern, PA 19355-9998, USA
siemens-healthineers.us

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