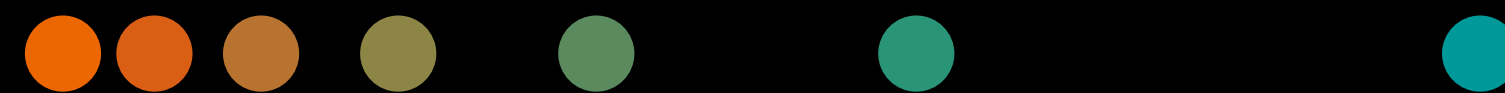


Value Partnerships in the USA

Innovative technology and solutions to transform care delivery

siemens-healthineers.com/value-partnerships





"Providers in the USA deliver some of the best healthcare in the world, but there are several factors that can compromise access to that care, including insurance coverage, out-of-pocket costs, social determinants of health, and geographic location. The need to improve care delivery while reducing its cost is critical to the overall health of the USA population and the nation's economy.

We are very proud of the results we have achieved to date with the two Value Partnerships profiled here. By working hand-in-hand as one team, we have improved the quality of care they are able to deliver, while containing costs and planning for the future. I hope, as you read these Value Partnership profiles, that you are inspired to identify and elevate strategic opportunities in your organization for the benefit of the communities you serve."

Brent Kruse, Head of Siemens Healthineers Enterprise Services, Americas



Introduction

- Shaping the future of healthcare
- The USA healthcare landscape
- Value Partnerships

Shaping the future of healthcare

Transforming care delivery

Medical technology is transforming healthcare. Digitalization is accelerating, with hospitals and practices adopting telemedicine, digital front doors, data-driven operations management and more. These changes are intended to meet patient demand for convenience, support flexible responses to crises and changes in patient populations, and increase quality while reducing costs, all while improving staff satisfaction and performance. In the USA, healthcare providers are working together with medical technology companies to improve patient experience and provide value-based care. New medical technologies, when coupled with performance innovations, are transforming care delivery to provide more holistic, patient-centered care. Collaborations between healthcare providers and medical technology companies leverage their unique strengths in order to realize better outcomes.

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 your table. As trusted partners, we help you formulate and achieve your strategic goals, increasing enterprise-wide value.

Siemens Healthineers has formed **numerous Value Partnerships** with healthcare providers **in the USA**, ranging from hospital systems to academic medical institutions. Two of these healthcare systems provide insights into the increased value that strategic Value Partnerships can provide – ranging from advancing access to high-quality care, to developing a curriculum to attract and train a future workforce, and beyond.

Both of these healthcare providers are leveraging enduring relationships based on trust to improve clinical and financial outcomes and enhance patient experience.

The USA healthcare landscape

In the USA, healthcare planning is done at the state level, with a mix of healthcare insurers and government oversight. The USA ranks at or near the bottom among high-income countries, with a high infant mortality rate and a life expectancy lower than almost all western European countries. The life expectancy in the USA is 78.7 years, with many people living years with disability and illnesses, such as heart disease, cancer, and diabetes.^{1,2}

Healthcare systems are fragmented and often inefficient, with many rural regions coping with insufficient healthcare staff and poor or outdated technology infrastructures. Types of hospitals in the USA vary – from specialized care, such as neonatal units, maternity and women's healthcare and oncology, to acute care centers, private hospitals, community hospitals, closed staff hospitals, teaching hospitals, and federal hospitals for military

personnel, veterans, and Native Americans. Integrated delivery networks (IDNs) and ongoing consolidation continue to reshape the healthcare landscape. The Centers for Medicare & Medicaid Services initiated value-based purchasing in 2013 to incentivize hospitals to reach certain quality and patient experience thresholds.³ The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores are publicly reported, encouraging a shift to value-based care. The shift to a value-based healthcare delivery model, where providers are paid based on patient health outcomes, has increased a need to focus on better personalized care.

With 20 offices and more than 12,000 employees in the USA, Siemens Healthineers has the resources and expertise to fully meet the needs of this important market.



Like many states in the USA, South Carolina and Missouri are striving to achieve better coordinated health systems that can deliver consistent, high-quality care to all patients across all care sites.

The healthcare landscape in South Carolina

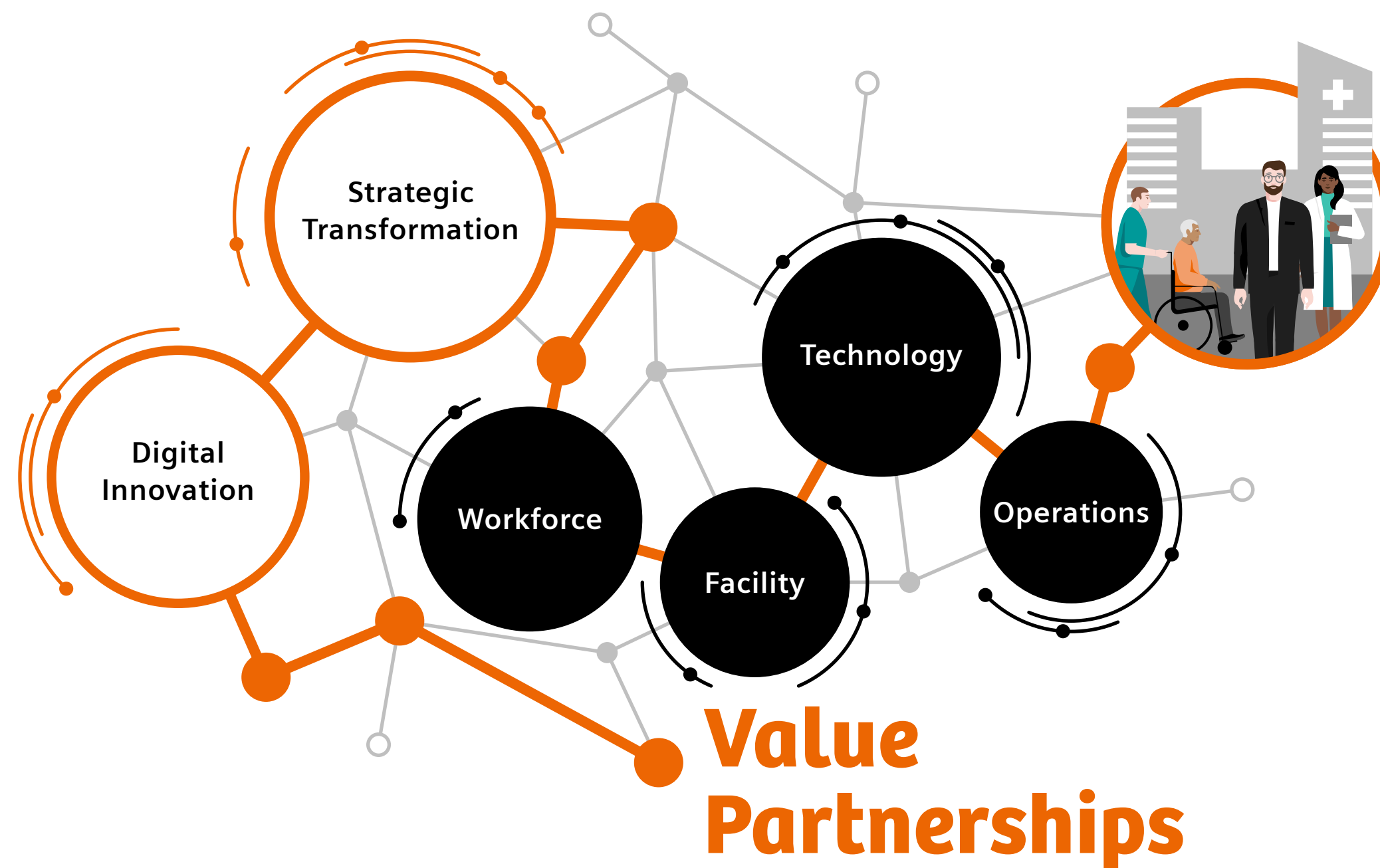
The population of South Carolina struggles with poor health outcomes and is underserved by current healthcare models⁴. Many patient populations avoid preventive care due to lack of insurance^{5,6}, and there is a high prevalence of multiple chronic conditions, like cardiovascular disease, chronic obstructive pulmonary disease, cancer, diabetes, and depression, with clusters of disease in specific hotspots.^{7,8} The state has low birth weight rates, as well as rural communities that are concerned about access to labor and delivery care.⁹ South Carolina needs clinical and value-driven innovations in target areas: pediatrics, cardiovascular care, radiology, and neuroscience.

The healthcare landscape in Missouri

In 2013, the state of Missouri initiated a statewide objective to increase the primary care workforce in Health Professional Shortage Areas (HPSAs) and to improve health outcomes for citizens in the southeast region of Missouri as part of Healthy People 2020 (Missouri Health Improvement Plan).¹⁰ The highest priority for the UM System, the statewide NextGen Precision Health initiative, positions Missouri on the cutting edge of healthcare breakthroughs, focusing on treatments for diseases including cancer, Alzheimer's disease, cardiovascular disease, and other illnesses that affect Missourians and patients around the world. The effort will be anchored by the NextGen Precision Health institute on the campus of the University of Missouri in Columbia, MO, where UM System researchers and industry partners will work together to accelerate life-saving treatments from bench to bedside. The state of Missouri needs increased healthcare precision, cutting-edge research and medical technology to attract students and clinicians to its universities, and improved healthcare for rural, underserved regions. There is also a need for trained clinical and technical personnel who will help transform care in Missouri and beyond.

Value Partnerships

Relationships founded on trust and collaboration



A Siemens Healthineers Value Partnership provides organizations access to an immense knowledge base and a vast portfolio of products and services. We can help you:

- Co-create expansion strategy and response to unexpected developments
- Advance the level of technological innovation and process optimization in your organization
- Co-create solutions designed to generate clinical, operational, and financial benefits
- Develop long-term strategies and goals instead of short-term reactions, enabling more value creation and innovation for the years to come
- Gain a fresh perspective on your institution, in order to envision potential improvements and innovations

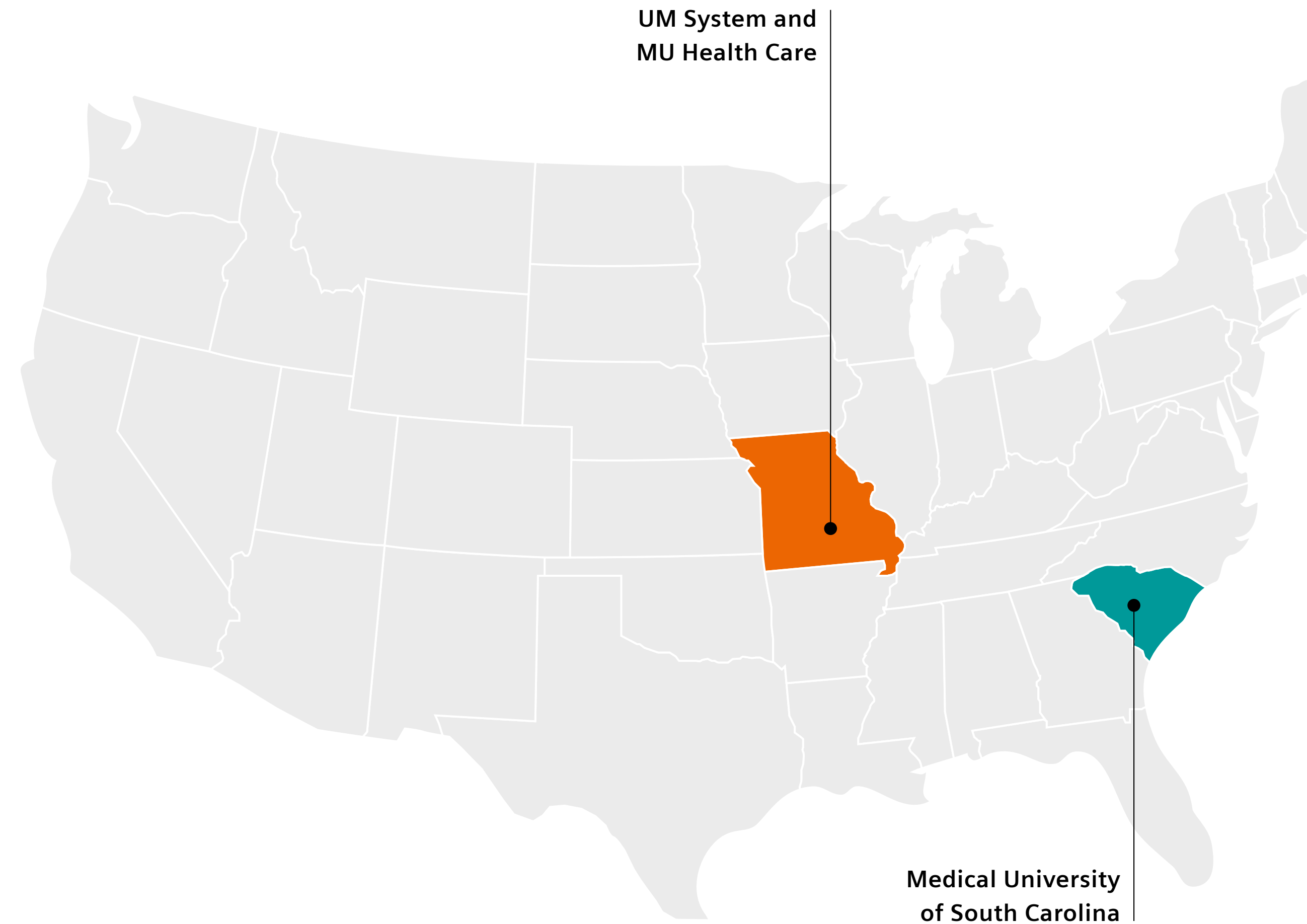
Every Value Partnership has an engagement manager on-site with your team who is deeply engaged with your day-to-day operations, e.g., through supervision of the daily utilization of the current technology to optimize efficiency and workflow.

Our on-site engagement manager can identify opportunities to conduct new training and professional education to minimize any gaps based on current and anticipated future business needs. And above all, we are powerfully invested in your success, for example we can help your institution promote the innovations in care delivery you are making through co-marketing initiatives targeted to your community.

Value Partnerships success stories: USA

Exceeding expectations and
expanding capabilities

- Medical University of South Carolina
- University of Missouri System
(UM System) and University of
Missouri Health Care (MU Health Care)




Medical University of South Carolina (MUSC)

Generating significant innovations in pediatrics, cardiovascular care, radiology, and neuroscience



Value Partnership summary

Medical University of South Carolina

 [Find more information here](#)

The Institution:

As the clinical health system of the Medical University of South Carolina (MUSC), MUSC Health is dedicated to delivering the highest quality and safe patient care while training generations of compassionate, competent health care providers to serve the people of South Carolina and beyond. Close to 25,000 care team members provide care for patients at 14 hospitals with approximately 2,500 beds and 5 additional hospital locations in development, more than 300 telehealth sites and nearly 750 care locations situated in the Lowcountry, Midlands, Pee Dee and Upstate regions of South Carolina. In 2021, for the seventh consecutive year, U.S. News & World Report named MUSC Health the No. 1 hospital in South Carolina.

Public/private:

Public

Beds:

2,500 (total of hospitals and outreach sites)

Value Partnership start

2018

Duration of Value Partnership

10 years

Key Services:

- Provision of all medical technology (including replacement cycles)
- On-site project management and coordination of transition strategy
- Coordination of hospital construction and third-party vendors
- Increase of technological scope in order to increase clinical capability
- Expand capabilities with Digital Twin-enabled workflow and layout optimization, and RealTime Location Solutions
- Implementation of educational roadmap
- Financing





MUSC faced challenges in driving performance excellence and generating significant clinical and value-driven innovations in target areas such as pediatrics, cardiovascular care, radiology, and neurosciences.

In 2018, MUSC entered into a 10-year Value Partnership with Siemens Healthineers. The goal was to implement new capabilities, streamline existing workflows, and provide innovations in delivery of care to support MUSC's expanding footprint. The challenge was to overcome fragmentation, cost, and inefficiency of healthcare delivery systems, and MUSC decided to pair with a partner that could provide the medical technology innovations and workflow improvement capabilities designed to couple with MUSC's clinical care, research, and education expertise.

The Value Partnership includes delivery and commissioning of over 100 medical devices, covering all medical imaging technology, a re-engineered stroke center, hybrid operating rooms, and

In addition, Siemens Healthineers developed and maintains a technology roadmap with upgrades and replacement plans for almost all technical devices, hybrid operating rooms, mammography, ultrasound, computed tomography, point of care systems, IT and third-party equipment.

Additional services include user training and contract negotiations.



The benefits of RTLS

RealTime Location Solutions (RTLS) data simplifies tracking of personnel, equipment, and material. RTLS data can be used to enrich and enhance simulations in digital twin technology.

"We feel confident that this RTLS-enhanced digital twin technology will be instrumental in maximizing efficiency and optimizing the patient and family experience at the new MUSC Shawn Jenkins Children's Hospital and Pearl Tourville Women's Pavilion. These revolutionary digital advances will ultimately enable our providers to get better outcomes at a lower cost, by helping them forecast how well possible workflow solutions or health innovations may actually work in our new facility."

Dr. Mark Scheurer, Chief of Children's & Women's Services, MUSC



"We are thrilled to have several research and joint development initiatives as well as ten performance innovation projects ongoing at MUSC that are specifically focused on patient access. That focus includes projects in Pediatric Neurology, ENT, and GI clinic access, as well as a comprehensive imaging strategy involving MRI, PET/CT, Mammography, Ultrasound, CT, and Nuclear Medicine. In working closely with the Clinical and Administrative teams in these areas, our execution has produced exciting results in our ability to allow patients to access healthcare delivery much faster, which often leads to quicker diagnosis, treatments and better clinical and financial outcomes."

David Able, Engagement Manager, Siemens Healthineers

Since launch in August 2018, MUSC has experienced benefits such as:

- 33% increase in PET/CT exams per day
- 53% increase in new patient visits per provider in Pediatric GI Clinic access focus project
- Pediatric GI Clinic appointments for next available time improved by 2 weeks
- Technology integration with the opening of a free-standing children's hospital and women's pavilion
- 20% increase in patient mammography screenings with women's breast health project
- Reduced length of in-patient stay by >7% for stroke care
- 7% increase in exams/day for MRI, with a 5% reduction of same-day cancellations

3 years

Future projects include improved pediatric facilities, enhanced cardiac care, and creation of an expanded neurosciences/stroke project.



Benefits of trust and partnership


The trust established between Siemens Healthineers and MUSC through close, side-by-side collaboration enables the organizations to continually transform healthcare delivery for the people of South Carolina and beyond.

UM System and MU Health Care

Improving healthcare quality through precision
medicine and access through digital solutions



Value Partnership summary

 [Find more information here](#)

University of Missouri System (UM System) and
University of Missouri Health Care (MU Health Care)

Institutions:

- University of Missouri Health Care, Columbia
- Capital Region Medical Center, Jefferson City
- Ellis Fischel Cancer Center, Columbia
- Missouri Orthopaedic Institute, Columbia
- Missouri Psychiatric Center, Columbia
- University Hospital, Columbia
- Women’s and Children’s Hospital, Columbia
- More than 50 outpatient clinics
- 4 University campuses

Public/private:

Public

Beds:

600 + intensive care and acute care

Value Partnership start

2019

Duration of Value Partnership

10 years

Key Services:

- Development of joint curricula for the University on cybersecurity, data science, machine learning and artificial intelligence
- Digital health solutions focused on aiding the clinical decision-making process
- Installation and management of latest medical technology, such as 7 Tesla MRI scanner, to improve patient care and support research initiatives
- Updated curricula and mentoring programs for students
- Financing (equipment leasing agreement)





This consortium of four universities (UM System) and MU Health Care, which operates several hospitals in Missouri, needed technology, training resources, and updated curricula and mentoring programs for their students to improve healthcare in the state of Missouri.

In pursuit of these goals, the consortium engaged Siemens Healthineers for a 10-year Value Partnership. The Alliance for Precision Health includes co-developed curricula that prepares students for careers in clinical engineering and imaging, a research agreement to initiate projects that advance precision medicine, and the latest medical technology and digital solutions to enhance patient care. The Value Partnership supports the NextGen Precision Health institute, sponsoring two floors and fostering innovation in medical research, healthcare delivery, workforce development, and education.

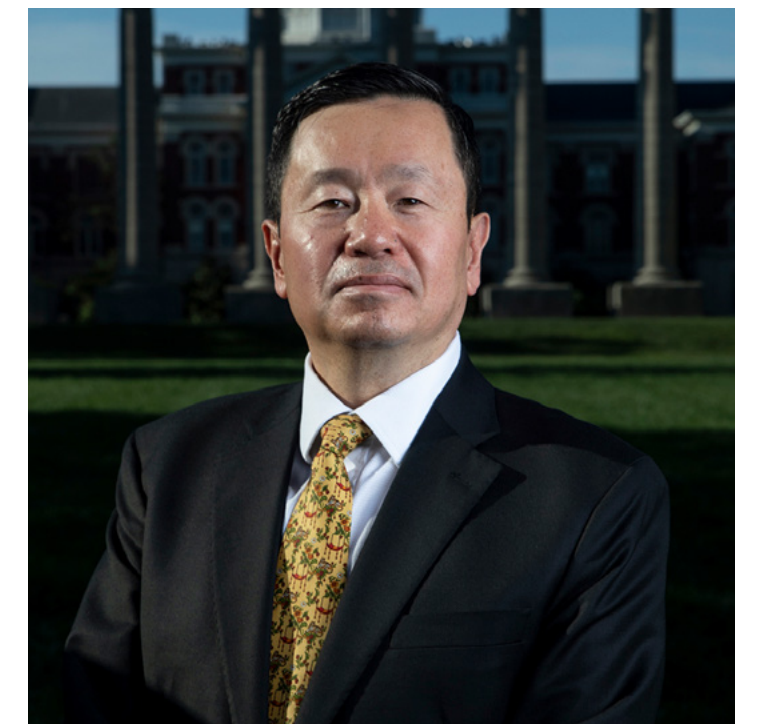
“The NextGen Precision Health institute is opening in October of 2021. This is an incredibly unique opportunity to unite research, clinical, academic, and corporate partners under one roof to inspire innovation and research that improve health outcomes.”

Eric Peterson, Engagement Manager, Siemens Healthineers



“Our vision for the entire UM System is to advance the opportunities for success and well-being in Missouri, the nation and the world. Forming an alliance with Siemens Healthineers enables us to work toward this mission.”

Mun Y. Choi, Ph.D., President, University of Missouri System



Almost two years into this Value Partnership, UM System and MU Health Care have:

- Co-developed a bio-engineering curriculum and AI internships for the University
- Installed the first *syngo* Virtual Cockpit in the USA
- Initiated campus testing and longitudinal studies for COVID-19 and other innovative ideas inspired by the pandemic
- Decreased MRI brain scans from 1 hour to 30 minutes per patient, with a final goal of 10 minutes per patient

2 years



Benefits of trust and partnership

Our partners in Missouri trusted Siemens Healthineers to help steer the organizations toward the **key strategic goal** of transforming care delivery through access to precision medicine and digital solutions. Learn more about the Alliance for Precision Health at

 AllianceForPrecisionHealth.org

Co-creating high value care with a trusted partner in the long run

- > How Value Partnerships help you
- > Value Partnerships modules
- > Voices of Value Partnerships
- > Other Value Partnerships around the world

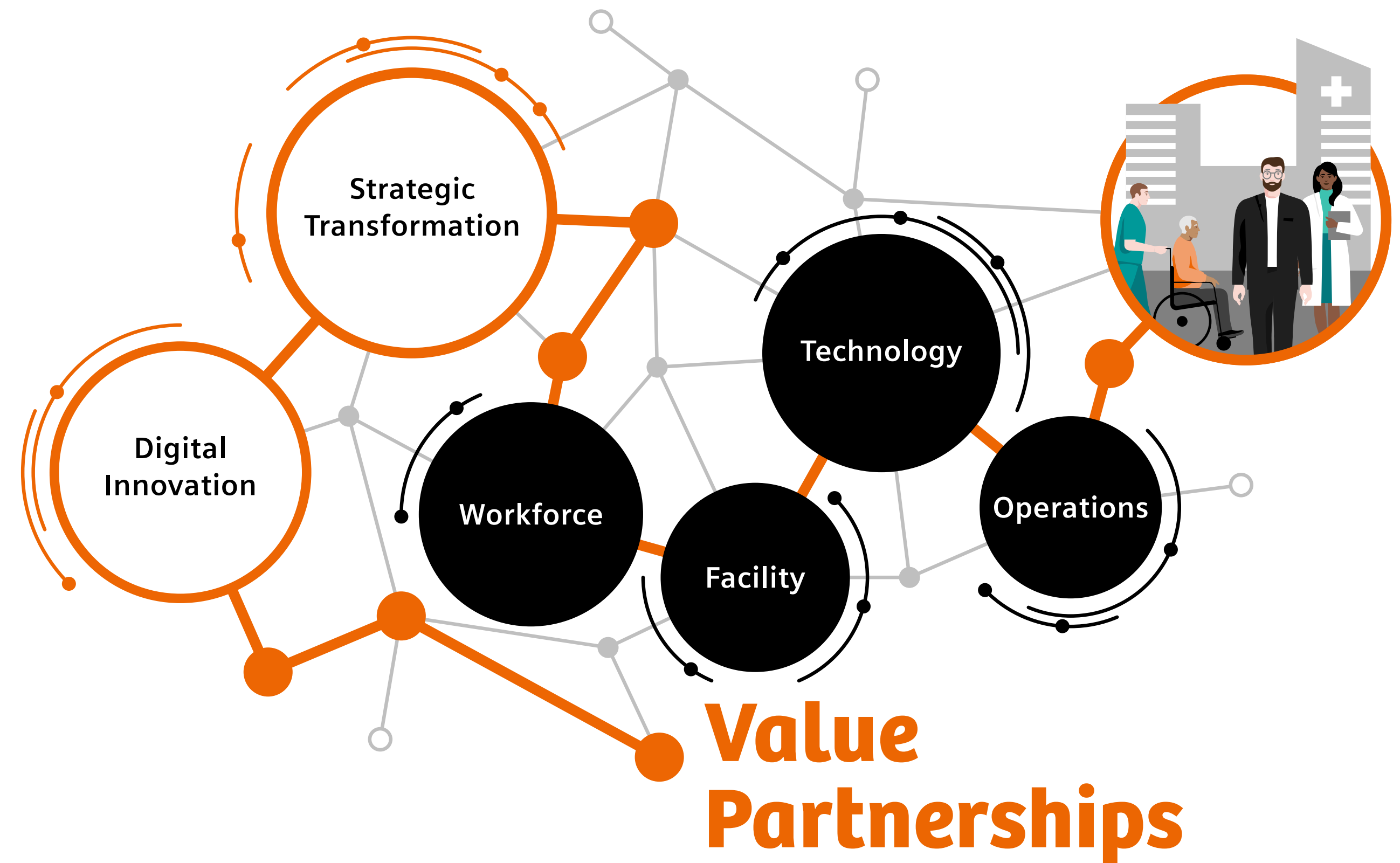


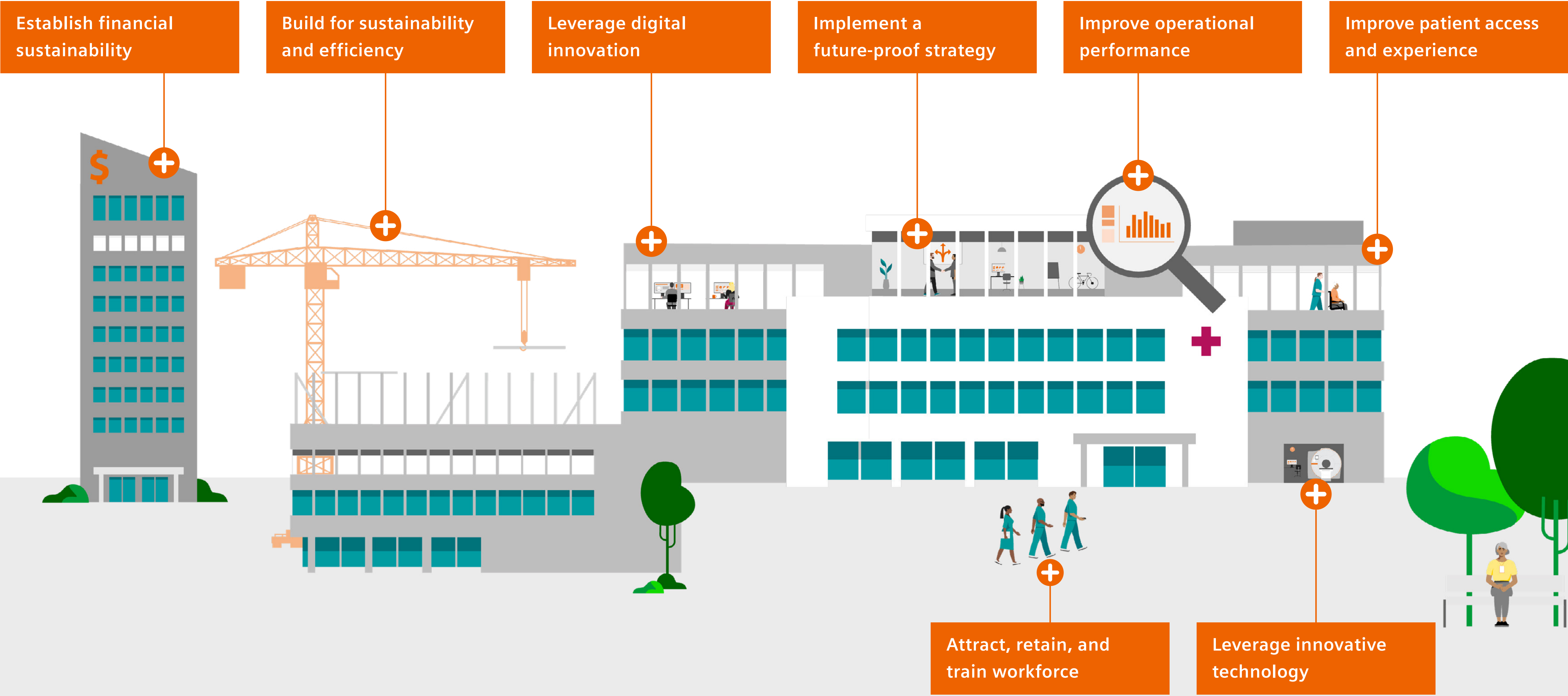
How can Value Partnerships help you?

With Value Partnerships, we bring a combination of clinical insight, medical technology innovation, strategic vision, implementation expertise, and operational excellence to your table for. As trusted partners, we help you formulate and achieve your strategic goals, increasing enterprise-wide value.

The customers profiled here have a wide variety of goals – streamlining technology management workflows, closing gaps in staff training, expanding service offerings, planning a long-term medical technology strategy – but they are all motivated by the same underlying need to deliver high quality financially sustainable care for their patients. And we work every day to earn their trust, by delivering not only the highest quality medical technology, but also expert guidance on how to optimize its use, and support services that are always there when you need them.

Siemens Healthineers has a robust portfolio of services available under the Value Partnerships umbrella. We are ready to be your trusted partner to co-create a solution with you that will generate the tangible clinical, operational, and financial benefits you seek.





Value Partnerships Drivers



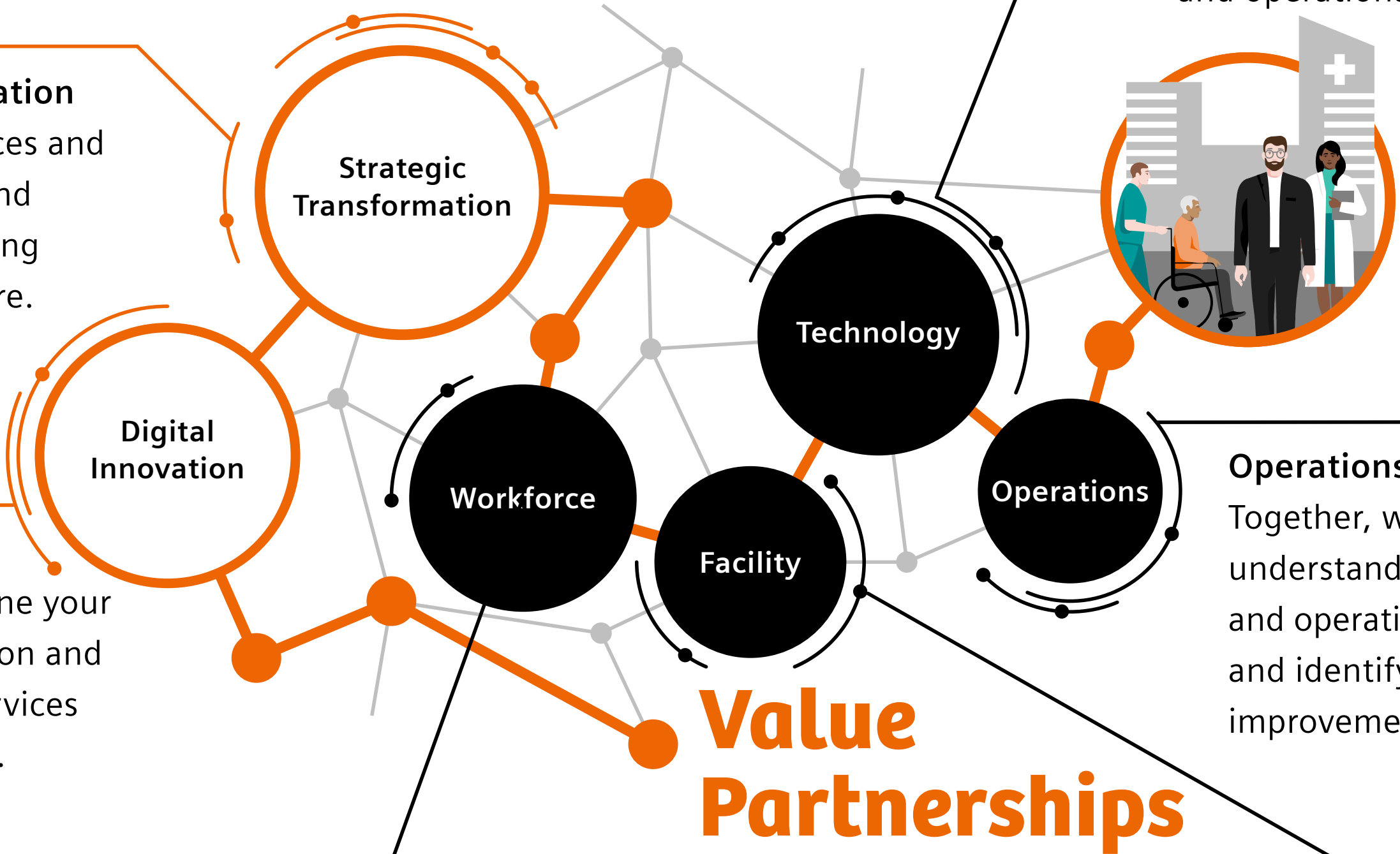
Strategic Transformation
Together, we join forces and help you anticipate and prepare for the evolving demands of healthcare.



Digital Innovation
Together, we reimagine your healthcare organization and build tech-enabled services for core departments.



Workforce
Together, we collaborate to ensure you get the most value out of your existing workforce and make smart decisions today so that your staff will be ready for tomorrow's challenges.



Technology
Together, we ensure that you get the most value out of your technology investments by driving commercial and operational efficiency.



Operations
Together, we develop a deeper understanding of your clinical and operational performance and identify and jointly pursue improvement opportunities.



Facility
Together, we collaborate and share your vision for healthcare facility planning and design, centered around the needs of people – both your patients and your staff.



Voices of Value Partnerships

Our healthcare provider partners speak about how Value Partnerships build trust and create new value



“The Siemens Healthineers Value Partnership allows us to think and perform differently than we could on our own. With this new building we have expectations about creating our operating rooms or theaters and recovery spaces in a certain way. The partnership allows us to plan for that differently – to think methodically through precise ways we can impact the patient and family experience.”

Dr. Mark Scheurer, Chief of Children’s & Women’s Services, MUSC





“As the leading academic health sciences center in this state, MUSC’s purpose must be to drive the highest quality care for our patients at the lowest cost through commitment and partnerships. In discussions with the Siemens Healthineers team, we discovered a high degree of alignment with these concepts, and we are very excited to have them move forward with us.”

David J. Cole, M.D., President, MUSC



“It goes so far beyond just that traditional transactional relationship with this partnership. The request was to try and create a relationship that was truly unique and disruptive. When we have conversations now, we don’t refer to each other as a customer or a client. It is truly partners, and that goes both ways. And now I think both sides understand that since there’s a give and take in this, we both have skin in the game from a risk perspective that we try to leverage that risk to make it fair and equitable on both sides.”

David Able, Engagement Manager, Siemens Healthineers

“Our Value Partnership with the University of Missouri operates with an aligned Mission to save and improve lives through innovation, collaboration, education and research. These are the pillars that drive all the opportunities that we take on together. As true partners we constantly challenge each other to think differently on how to solve the most complex problems we face in healthcare.”

Eric Peterson, Engagement Manager, Siemens Healthineers



“Our vision for UM System is to advance opportunities in Missouri, across the nation and around the world through transformative teaching, research, innovation, engagement and integration. The alliance with Siemens Healthineers helps us to realize this mission. It provides our university and the healthcare system with unique opportunities for research and collaboration, the healthcare education of the next generation and an important contribution to medicine and healthcare in rural Missouri and beyond through leading technology and resources.”

Mun Y. Choi, Ph.D., President, University of Missouri System



Explore more Value Partnerships around the world

To learn more about Value Partnerships and explore their potential for helping you meet your needs and achieve your objectives, please contact a Siemens Healthineers representative today!

Read our recent Value Partnerships white papers:

➤ [Value Partnerships white papers](#)

Explore all our case studies:

➤ [Value Partnerships case studies](#)

Read news about the University of Missouri System:

➤ [MU System and MU Health Care](#)

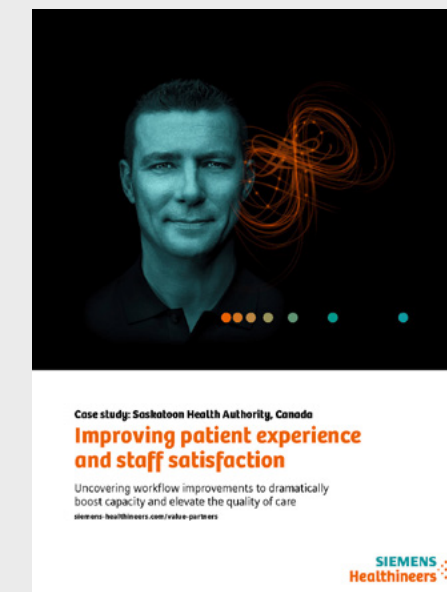
Learn more about the MUSC Value Partnership:

➤ [Medical University of South Carolina](#)

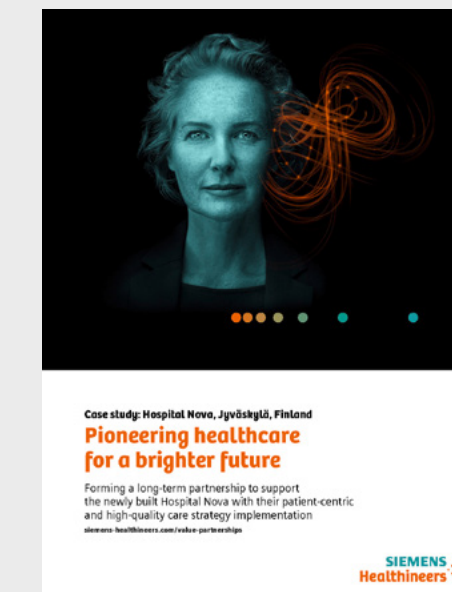
Learn more about additional featured Value Partnerships in USA here:

➤ siemens-healthineers.com/en-us/services/value-partnerships

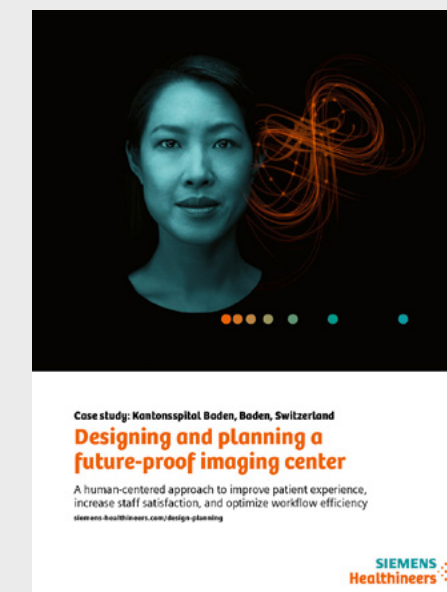
Selected Highlights



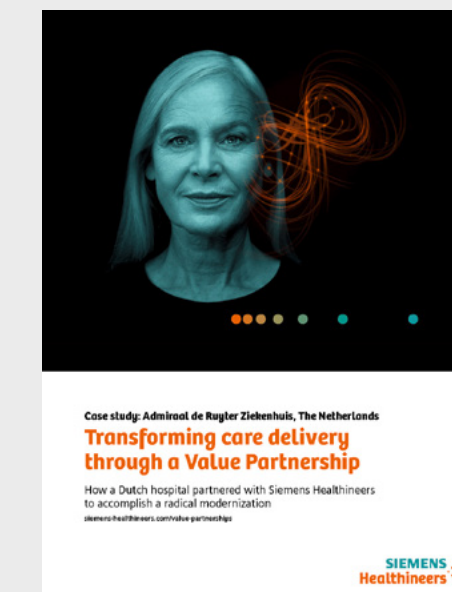
Saskatoon Health Authority, Canada



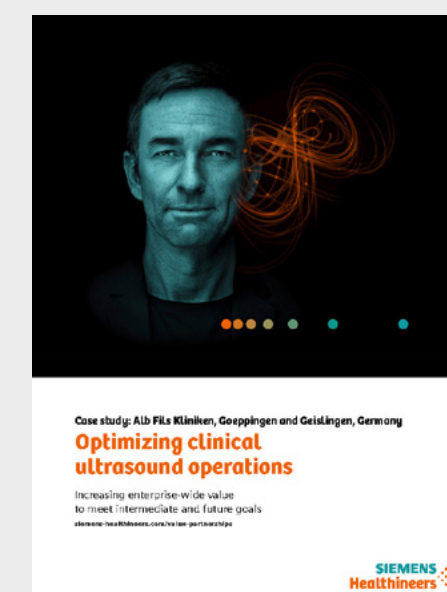
Hospital Nova, Finland



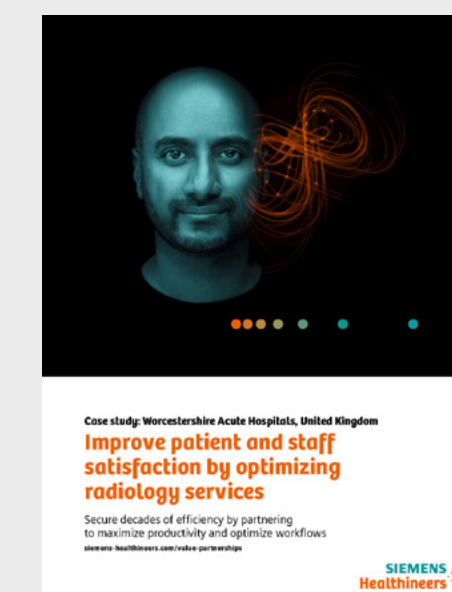
Kantonsspital Baden, Switzerland



Admiraal De Ruyter Ziekenhuis, Netherlands



Alb Fils Kliniken, Germany



Worcestershire Acute Hospital, United Kingdom

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.

The scientific overlay on the title is not that of the individual pictured and is not from a device of Siemens Healthineers. It is modified for better visualization.

¹ Kochanek KD, Anderson RN, Arias E. Changes in Life Expectancy at Birth, 2010-2018. National Center for Health Statistics. Health E-Stats. January 2020.

² National Center for Health Statistics. Health, United States, 2019. 2019 At-a glance table. Hyattsville, MD. 2021. Available at <https://www.cdc.gov/nchs/atus/ataglance.htm>.

³ <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Hospital-Value-Based-Purchasing->

⁴ Health Professionals Shortage Areas. Interactive application. Institute for Families in Society. SC HealthViz. Available at: <https://www.schealthviz.sc.edu/health-professional-shortage-areas>.

⁵ Non-Elderly Uninsured in South Carolina (Persons 0 to 64 Years of Age). April 2018. Division of Integrated Health and Policy Research at the USC Institute for Families in Society.

⁶ USC Institute for Families in Society. (2019, July). South Carolina’s Health Outcomes Plan (HOP): Improving health care access for the uninsured through community partnerships [Infographic]. SC HealthViz [Website]. Columbia, SC: University of South Carolina, Institute for Families in Society. Available at: <http://schealthviz.sc.edu/poster>.

⁷ Stats of the State of South Carolina. 2017. National Center for Health Statistics. Available at: <https://www.cdc.gov/nchs/pressroom/states/southcarolina/southcarolina.htm>.

⁸ Adult and Child Disease Hotspot Maps. Interactive application. Medicaid Policy Research at the USC Institute for Families in Society. Available at: <https://www.schealthviz.sc.edu/hot-spots-by-age-groups>.

⁹ Deliveries and Births CY2019. December 2020. South Carolina Birth Outcomes Initiative. Available at: https://www.schealthviz.sc.edu/Data/Sites/1/media/downloads/SCBOI_DeliveriesandBirths-CY2019.pdf.

¹⁰ Missouri Health Improvement Plan. 2013-2018. Rev. 2017. Missouri Department of Health and Senior Services. Available at: health.mo.gov/data/pdf/mohealthimproveplan.pdf.

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