



**Case study: University of Missouri Health Care**

# **Streamlining Interventional Radiology processes to improve operational performance**

Enabled by ActExcell

[siemens-healthineers.com/actexcell](https://siemens-healthineers.com/actexcell)

# Executive summary

## Enhancing Interventional Radiology efficiency to improve patient care

University of Missouri Health Care, located in Midwestern United States, comprises seven hospitals, including the prominent University Hospital, and more than 80 outpatient clinics. University Hospital faced challenges in optimizing Interventional Radiology procedures and sought to address clinical and operational inefficiencies. To tackle these issues, the hospital turned to Siemens Healthineers, leveraging the health system's Value Partnership to streamline Interventional Radiology workflows and enhance overall efficiency.

The Siemens Healthineers ActExcell team conducted a thorough analysis of the Interventional Radiology department, identifying key areas for improvement such as data insights, operational transparency and appointment scheduling. ActExcell helps leaders transform data into actionable insights, improving imaging technology utilization, staff productivity and patient care. By implementing targeted changes, including a new pre-operative area and refined team huddles, the department achieved significant improvements. First-case start times improved by 28%, appointment accuracy increased by 112% and room utilization rose by 28%, resulting in a 42% increase in the number of interventional exams performed.

The ActExcell dashboard has provided crucial transparency and ongoing monitoring capabilities, enabling University Hospital to continually assess performance against KPIs and identify further areas for enhancement. This Value Partnership has substantially improved patient experience and operational efficiency, positioning the hospital for future success.



**Value Partnerships with Siemens Healthineers** are long-term, performance-driven relationships 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.

### ActExcell

**ActExcell** is a comprehensive advisory service designed to help health systems and hospitals transform data and analytics into actionable insights. The service supports customers in better understanding the utilization of existing imaging technology, acting promptly and effectively on available data, and improving productivity, access to care and patient experience constantly. Actionable Excellence providing real outcomes.

# The customer

University of Missouri Health Care:  
an academic health system leader providing comprehensive care



## University of Missouri Health Care, USA at a Glance

Includes seven hospitals and over 80 outpatient clinics, including:

- University Hospital, with 374 beds, serves as a Level 1 trauma center\*
- Keene Street Medical Center\*
- Children's Hospital\*
- Ellis Fischel Cancer Center\*
- Missouri Orthopaedic Institute
- Missouri Psychiatric Center
- Capital Region Medical Center

University of Missouri Health Care began in 1845 with the establishment of the medical department. The following year, the University awarded its first medical degrees. Its School of Medicine was established in Columbia, Missouri, in 1872, and in 1901, Parker Hospital, its first clinical

training facility, opened. Today, the system boasts seven hospitals and more than 80 outpatient clinics. With a rich history of excellence in patient care and medical education, the system has been serving the people of Missouri for decades.

# The challenge

Addressing key bottlenecks in Interventional Radiology

Large health systems often face the ongoing challenge of optimizing processes to ensure consistency across their organizations. This is particularly crucial in complex areas like interventional procedures, where reducing clinical and operational variation can significantly enhance overall efficiency. At University Hospital, the focus is on optimizing all interventional procedures by addressing key issues such as clinical variation, capacity constraints and process bottlenecks. This initiative aims to improve efficiency and increase capacity for Interventional Radiology procedures, thereby supporting both the academic and clinical missions of the institution.

University of Missouri System, including MU Health Care, has been engaged in a Value Partnership with Siemens Healthineers, leading to significant improvements across the system in delivering high-quality, consistent care, advancing education, and fostering innovation. Through the integration of advanced technology, the Value Partnership enhances clinical capabilities and improves exam consistency. It also emphasizes workforce development in fields like cybersecurity and AI. Given the already strong and productive relationship, the Value Partnership was a natural and trusted resource for enhancing University Hospital's Interventional Radiology workflows.

\*All located on the same campus.

# The solution

## ActExcell: enhancing workflows with customized KPIs

The ActExcell team from Siemens Healthineers collaborated closely with the Interventional Radiology department to identify and address key operational challenges. The team oversaw the tailored deployment of the ActExcell dashboard, powered by teamplay Insights. This dashboard collects and analyzes data from a wide range of relevant sources (EHRs, RIS, etc.) and enables identification of potential areas of improvement. Combined with a detailed process of observations, interviews and mapping, the team pinpointed critical areas needing improvement, including data insights, operational transparency, pre-operative optimization and communication. They also recognized a significant need to enhance appointment scheduling accuracy.

### Baseline Conditions

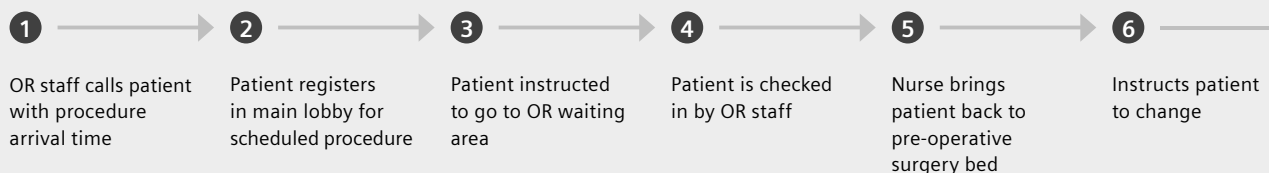
- Team huddle expectations were inconsistent and impacted first case, on-time metric
- Long wait times from arrival to exam start
- Appointment errors occurred when available radiology timeslots did not align with exam time
- Rooms were not being used to their full potential

### Baseline Metrics

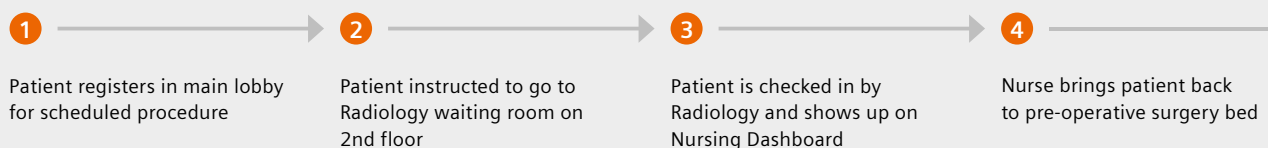
- 62% first case, on-time metric
- 132 minutes arrival to start time
- 17% appointment accuracy (cases within 10 minutes of the scheduled appointment duration time)
- 61% room utilization

By utilizing operational data to create customized dashboard pages and establishing a clear set of Key Performance Indicators (KPIs), the ActExcell team effectively tackled the identified inefficiencies. This approach led to meaningful improvements in team coordination, scheduling accuracy and room utilization. Ultimately, these enhancements contributed to more efficient workflows and better patient care in the Interventional Radiology department.

### Previous workflow:



### Optimized workflow:



# The results

## Optimized operations lead to faster start times and improved scheduling accuracy

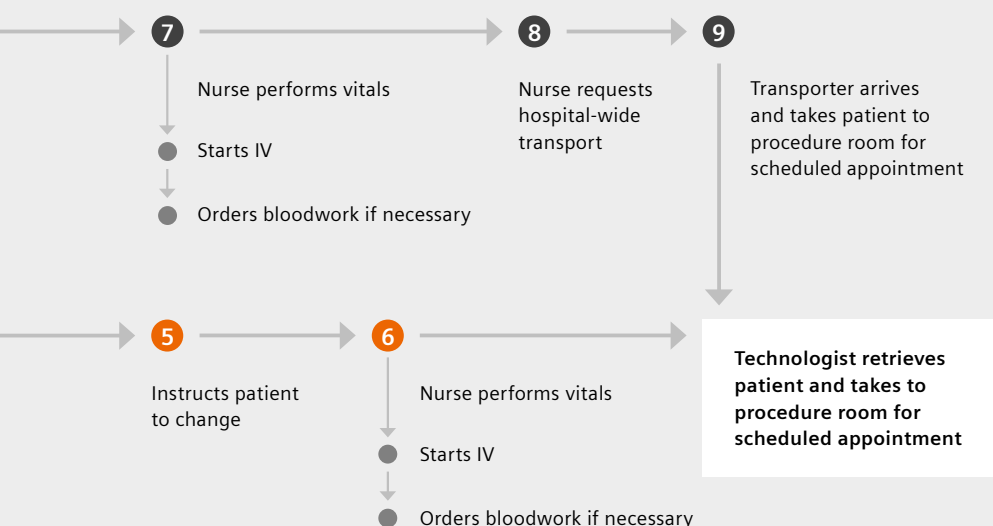
The ActExcell dashboard pinpointed bottlenecks in the pre-operative care workflow of the Interventional Radiology department, causing frustrating delays for patients. Determined to enhance efficiency, the team added a new pre-operative area next to the department, slashing wait times by an impressive 37 minutes. By revamping the morning team huddles, there was a 28% improvement in first case start times. More precise scheduling, thanks to better alignment with predicted

exam durations, boosted appointment accuracy from 17% to 36% – a staggering 112% increase. With smarter room coordination, the team also elevated room utilization by 28%, enabling the department to perform 42% more interventional radiology exams between 2020 and 2024. These improvements are making a real difference for University Hospital patients and its Interventional Radiology team.

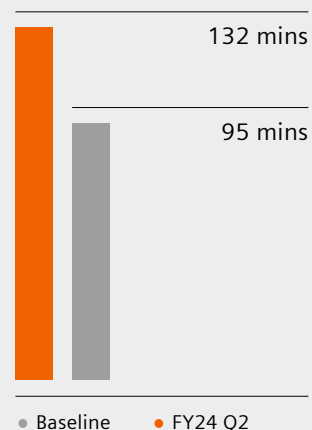
### Opportunity: Pre-operative area optimization

**Observed:** Congestion points in the pre-operative care for the Interventional Radiology Department.

**Implemented:** Changed infrastructure by adding a pre-operative space adjacent to the IR department where patients are prepped for their procedure.

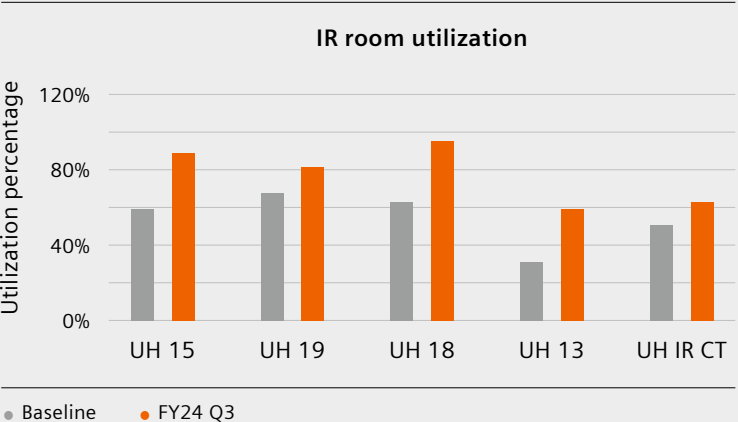


**28% reduction** in time spent in pre-operative areas

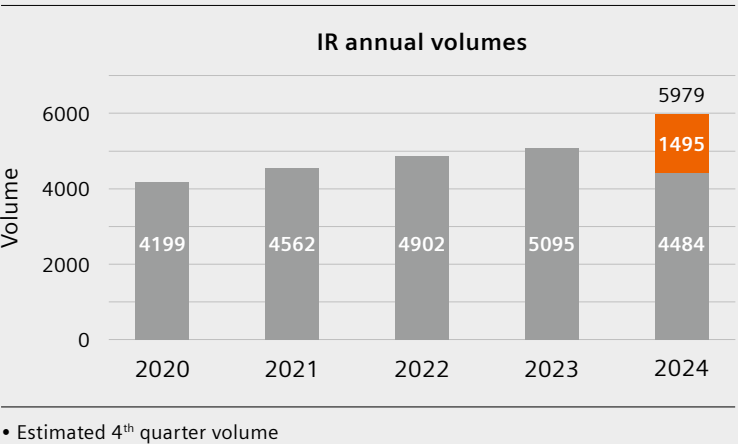


## Interventional Radiology outcomes at project close

Capacity: **28% increase** in IR room utilization



Growth: **42% increase** in IR exams





# The future

## Expanding efficiency and access with ActExcell at University of Missouri Health Care

Through its Value Partnership with Siemens Healthineers, University of Missouri Health Care leverages the ActExcell dashboard to continuously monitor and improve IR performance, enhancing capacity and access with clear, actionable data. Insights from ActExcell have already enabled sustained improvements in Interventional Radiology operations. Given this success, MU Health Care is looking forward to working with Siemens Healthineers on additional operational improvement projects.

As health systems face challenges in balancing increased demand for service with operational challenges, solutions like ActExcell can be essential for supporting improvements in efficiency and delivering high-quality care.



# About ActExcell by Siemens Healthineers

ActExcell is a comprehensive advisory service designed to help health systems overcome operational challenges.

The digitally enabled service from Siemens Healthineers combines data-driven insights with experienced healthcare advisors to drive a continuous stream of meaningful improvements. ActExcell service empowers you to convert data into actionable insights, providing demonstrable and sustainable results like better understanding the utilization of existing imaging technology, acting promptly and effectively on available data, and increasing productivity, access to care, and patient experience constantly. ActExcell powers ongoing value-creation, enabling you to discover previously unseen opportunities.

Actionable Excellence providing real outcomes.

## Disclaimer

The products/features and/or service offerings mentioned here 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 offerings cannot be guaranteed. Please contact your local Siemens Healthineers organization for more details.

The outcomes achieved by the Siemens Healthineers customer described herein 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 others 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 was modified for better visualization.

---

## Siemens Healthineers Headquarters

Siemens Healthineers AG  
Siemensstr. 3  
91301 Forchheim, Germany  
Phone: +49 9191 18-0  
siemens-healthineers.com