



As the premier destination for care in the region, University of Arkansas for Medical Sciences (UAMS) is committed to providing access to high-quality perioperative care, which also drives the overall financial performance of the enterprise. UAMS perioperative leadership recognized that previous approaches to improving operational efficiency and growth were no longer enough, so they embarked on a new strategy using AI and automation.

Background:

- Only AMC and Level 1 trauma center in Arkansas
- 535 beds across 8 regional campuses
- 28 operating rooms
- 2 surgical robots
- 1,438 faculty members

Challenges:

- Increase margins
- Improve OR utilization
- Grow surgical case volume
- Reduce manual work for OR scheduling

EHR:

- Epic

Qventus Solutions:

- Perioperative

Challenges to improving OR performance

Similar to many health systems, perioperative leaders at UAMS faced considerable challenges to optimizing their OR performance and needed to constantly balance competing priorities of stakeholders. Surgeons with block time often used only a portion of the time they had reserved. They released it at the last minute, leaving OR teams scrambling to fill the time – but too often it would not be used at all. Surgeons with less block time constantly requested more OR access, potentially taking their cases to a competing health system if they could not be accommodated. On top of balancing these demands, UAMS OR teams also needed to focus on meeting efficiency, utilization, and growth goals in order to support the health system's strategic priorities.

In addition to these challenges, UAMS also had several unique dynamics that made improving OR performance even more complex:

- UAMS is a primary referral site and regional destination for complex care. They receive many complex referrals and transfers, which generate an inpatient surgical volume on top of scheduled cases, for which OR capacity must be held
- A short auto-release window of four days put additional pressure on OR teams to fill released block time. Prior to the pandemic, this window was only 48 hours, but has since been expanded to allow for COVID testing requirements
- Robotic utilization suffered due to lack of available block time – it was difficult to reserve ORs with robots specifically for robotic cases

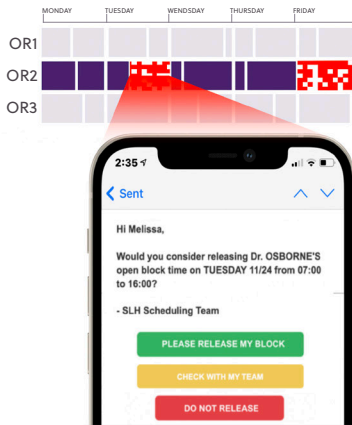
Previously, UAMS took several important steps to address these challenges and make progress towards their strategic goals. Additional investments in infrastructure, adjustments to the department organizational structure, and the revision of key

OR policies were foundational steps to improving OR performance over the long term and resulted in incremental progress across the board. However, UAMS leadership remained committed to investing in new resources that would continue to improve efficiency and access in their ORs – and to move away from manual, time-consuming processes. In order to transform perioperative operations, UAMS leaders wanted to take advantage of modern technologies and turned to Qventus' AI-powered software to enable them to automate care operations.

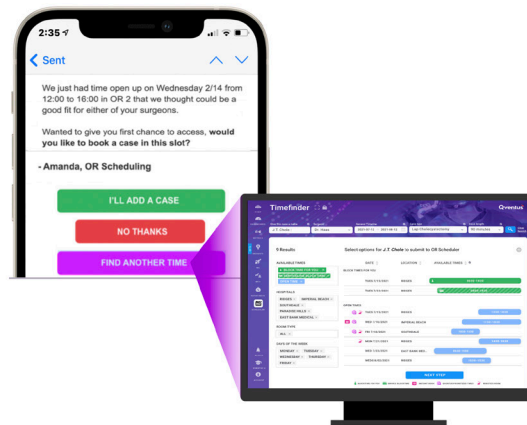
Qventus Perioperative Solution

To address these challenges, UAMS deployed the Qventus Perioperative Solution that uses modern innovations in AI, machine learning, and behavioral science. The solution includes three modules:

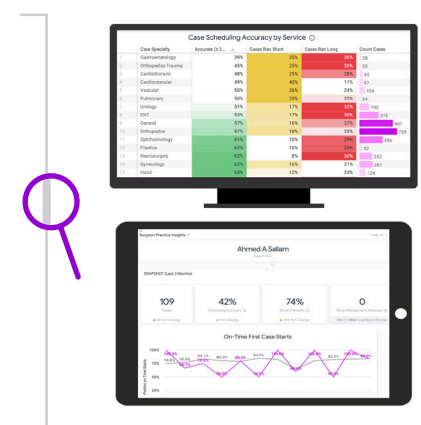
Access: Increase available time by proactively unlocking supply



Growth: Strategically grow volume by engaging with high-value surges



Insights: Surface actionable insights for surgeons and OR teams



- **Access** leverages machine learning algorithms to predict up to a month in advance which blocks are unlikely to be utilized. When the algorithm identifies a block, the surgeon receives a prompt explaining both the reason for the outreach, and, importantly, the benefit of yielding the time (e.g., improved block utilization). The automated outreach and efficient block release mechanisms create valuable lead time for OR teams to attract cases, increase utilization, and serve more patients sooner.
- **Growth** focuses on aligning health system strategic objectives and OR utilization. The module enables this alignment through two mechanisms:

Available Time Outreach: Once an OR slot becomes available, an algorithm automatically offers the time directly to surgeons that are predicted to be the best fit based on practice patterns and past performance. The algorithm can be modified to weigh institutional priorities, such as growing targeted service lines, improving robotic utilization, and decanting low acuity volume to specific facilities. Paired with the increased lead time created through the Surgical Access module, this automated approach enables leaders to proactively recruit high priority cases, rather than accepting whichever cases fill the slots organically.

TimeFinder: Employed and independent surgeons and their schedulers have access to an intuitive interface displaying OR schedules without having to log into the EHR. They can view slot availability, which are based on predicted case times derived from the surgeon's past performance) and submit the request to the OR team directly through the module

- **Insights** provides real time performance data to OR leaders and surgeons, creating a degree of transparency and timeliness that traditional reporting cadences lack.

Opportunity Finder: OR leaders can view real-time analytics to identify performance improvement opportunities and to serve as a basis for data-driven conversations with surgeons. This dashboard tracks several block utilization and case scheduling accuracy metrics in real-time.

Surgical Practice Improvement: Surgeons can view their current and historical utilization and scheduling accuracy metrics, as well as their case pipeline. Access to this data enables leaders to create a culture of transparency and accountability more broadly.

Results

By using the Qventus Perioperative Solution platform, UAMS has achieved significant improvement across several key metrics:

80%+

OR Utilization

\$1.2m

Annualized Margin Increase

6.5 days

Lead Time Added from
Proactive Release

Beyond the financial impact, the Qventus Perioperative Solution provides significant benefit for frontline teams:

- **Schedulers** have reduced administrative burden that comes with automation and streamlined communications
- **Surgeons'** ability to more easily access OR time has driven increases in provider satisfaction
- **OR staff** have improved predictability of daily workflows
- **Patients** have improved access and shorter wait times for surgical care, improving outcomes and patient experience

Importantly, the solution has been a critical tool for UAMS leaders as they navigate the staffing challenges impacting health systems nationally. By leveraging the flexibility that the Qventus platform enables, UAMS leaders have been able to more efficiently match staffing needs and shifting schedules. In addition to contributing to improved OR utilization, the organization now has greater agility that makes the scheduling process easier for both surgeons and staff.

Going forward, as UAMS develops and executes its expansion plans and progresses towards its broader vision, the Qventus Perioperative Solution will help leaders continue to identify, implement, and sustain performance improvement opportunities in their ORs.