

Solving Complex Radiology Scheduling

75% Decreased time spent creating schedules by 75%

130+ Successfully implemented over 130 rules to efficiently manage provider requests

5 to 4 Transitioned from five-day to four-day work week with optimized schedules

2 Improved clarity and efficiency by generating schedules once every two months

= Maintained critical coverage while supporting work-life balance



Organization

Large Health System Radiology Department

Challenge

Managing 40+ provider schedules across diagnostic and interventional radiology with complex rotation requirements and equitable distribution of responsibilities

Implemented Solution

Lightning Bolt Scheduling

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“If I didn’t have Lightning Bolt, it would take a lot of time to mathematically figure out how to manage the schedule.”

Scheduling Physician

From Spreadsheet Struggles to Scheduling Success

Today, this radiology department operates more smoothly and transparently than ever before. Physicians work four-day weeks with balanced rotations, vacation requests are handled effortlessly, and the scheduling physician spends 75% less time wrestling with scheduling challenges.

But the journey to this point wasn't simple.



Challenges

The Breaking Point of Manual Scheduling

For years, the radiology group's scheduling physician carefully built intricate Excel spreadsheets, painstakingly balancing provider preferences, rotation requirements, and call shifts. The manual process took up valuable time that could have been spent on patient care.

The manual process of creating schedules for 40+ providers divided between diagnostic and interventional teams, each with their own subspecialty rotations and preferences, had become too complex and time-consuming.

The Four-Day Week Vision

In 2016, the department envisioned a bold change: transitioning from the traditional five-day work week to a four-day schedule while maintaining comprehensive patient care. This vision would enhance physician work-life balance but presented some scheduling hurdles:

- Physicians would work 10-hour days instead of 8-hour days
- All subspecialty rotations needed full coverage despite fewer working days
- Call shifts required equitable distribution across fewer available days
- Fair distribution of off days became crucial for team morale

Evolving Practice Needs

As with many healthcare organizations, the department faced ongoing changes:

- Provider turnover through retirements and new hires
- Growing complexity in workflows requiring specialized coverage
- Increasing need for coordination between diagnostic and interventional teams
- Managing vacation requests while ensuring critical subspecialty coverage

Solution & Implementation

When the department reached its breaking point with manual scheduling, they started looking in earnest for a new solution that could reliably handle these legitimate challenges. Lightning Bolt had the optimization capabilities to handle the complexity and the team full of experts the group needed to get a leg up.

Partnership Approach

From the beginning, the department worked closely with a Lightning Bolt technical consultant who understood their specific challenges. This relationship proved crucial to success because the consultant:

- Translated the department's complex needs into a customized scheduling framework
- Designed and implemented 130+ rules to reflect both provider preferences and requirements
- Provided ongoing support as practice needs changed
- Met regularly to check out schedule results and make adjustments as needed

And with respect to rules, that's one area where the Lightning Bolt team's expertise and longevity is really evident. 130 rules may sound like a lot, but in the scope of what Lightning Bolt can handle—both the team and the technology—it's very normal. The team draws from years of experience with many kinds of implementations, so this level of granularity is not unexpected and can easily be folded into an efficient deployment.

Rules-Based Optimization

Each rule in Lightning Bolt is assigned a numerical priority, which guides the system's algorithm—powered by combinatorial optimization—when it builds schedules. Designed by a dedicated consultant who works closely with each group to reflect their unique preferences, these rules ensure the schedule aligns with physician needs.

The algorithm's goal is always to break zero rules if possible, but sometimes it has to break the “right” rules. In these instances, the lowest priority rules are broken (and flagged for review) to build the best, most complete schedule.

Part of Lightning Bolt's inherent flexibility is that no two rules have the same priority level, which allows the algorithm to create a complete schedule that covers even the hard-to-fill shifts. With this more nuanced approach, Lightning Bolt can satisfy the most scheduling rules possible with the fewest gaps. And best of all, rules only need to be configured once and are applied automatically moving forward.

With more basic scheduling solutions, rules may only have high, medium, and low priority designations, which creates problems when two rules with the same priority level are being compared. The system won't be able to make an independent decision about which rule should be broken, which results in a schedule gap. Lightning Bolt easily accounts for more granular levels of importance to avoid this scenario.

Smart Vacation Management

The scheduling physician partners with their Lightning Bolt consultant to set the number of physicians who can take PTO each week, with limits assigned to each radiology subspecialty.

“HOT PTO” requests submitted by the radiologists are auto-approved on a first-come, first-served basis until the weekly limit is met. Once the limit is reached, the system automatically blocks additional requests for that time period, helping to maintain balanced provider coverage.

Four-Day Work Week Success

The department successfully implemented their vision of a four-day work week with:

- Optimized 10-hour shift designs
- Automated rules ensuring fair distribution of off days
- Priority coverage for critical rotations when short-staffed
- Balanced call responsibilities across fewer working days

Results: A Department Transformed

From Time Drain to Efficiency

The most dramatic improvement came in administrative efficiency:

	Before Lightning Bolt	After Lightning Bolt
Schedule Creation	Manual, time-intensive process	75% reduction in time required
Vacation Management	Manual tracking and approval	Automated with tiered request system
Schedule Publishing	Monthly schedules only	Bimonthly schedules with greater efficiency
Rotation Balancing	Manual calculations	Automated with reporting validation
Work-Life Balance	Standard five-day week	Optimized four-day week with fair shift distribution

Results: A Department Transformed (Continued)

Physician Satisfaction

The department experienced notable improvements in physician satisfaction:

- Reduced burnout through four-day work weeks
- Greater transparency in rotation and call shift distribution
- Streamlined vacation requests with mobile access
- Fairer distribution of responsibilities

The transparent reporting system makes it easy to see that rotations are balanced fairly, which gives physicians confidence that the system accommodates preferences as equitably as possible.

Adaptability for the Future

Perhaps most importantly, the department gained the ability to evolve with changing healthcare needs:

- Easily modify rotations as practice patterns change
- Quickly adapt to staffing changes
- Test new scheduling approaches through simulation
- Make data-driven decisions about resource allocation

Lessons Learned

The department's journey yielded valuable insights:

- 1 Partner with experts:**
Regular collaboration with Lightning Bolt consultants proved essential. Their schedule reviews after each generation significantly improved results and reduced administrative burden.
- 2 Embrace automation:**
Transitioning from manual processes to Lightning Bolt's centralized system transformed administrative workflows. Mobile access for vacation requests improved satisfaction for both providers and schedulers.
- 3 Think bigger picture:**
Building schedules once every two months rather than monthly allowed the scheduling physician to tackle scheduling less frequently while maintaining quality.
- 4 Start with the end in mind:**
By clearly defining their vision of a four-day work week, the department was able to successfully implement this significant change thanks to Lightning Bolt's optimization capabilities.

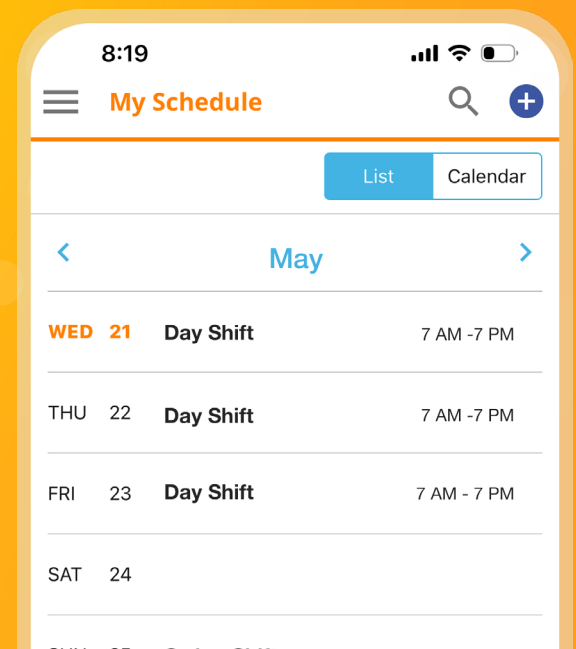
The Path Forward

Today, the radiology department operates more efficiently than ever. Physicians enjoy better work-life balance with their four-day schedule, administrative time has been significantly reduced, and the entire department benefits from the transparency and fairness built into their scheduling process.

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“Transparency on tallies and reports makes it easy to balance all of the rotations. As our practice changes, Lightning Bolt adapts. When we transitioned from a five-day work week to a four-day work week, Lightning Bolt optimized it. If I didn’t have Lightning Bolt, it would take a lot of time to mathematically figure out how to manage the schedule.”

Scheduling Physician



About PerfectServe

[PerfectServe](#) accelerates speed to care by optimizing provider schedules, streamlining clinical communication, and engaging patients and their families in the care experience. Our cloud-based software simplifies complex clinical workflows and schedules with secure and timely communication by dynamically routing messages to the right person at the right time. We drive more efficient care collaboration in all settings to improve patient outcomes and bring joy back to caregivers. PerfectServe has 25 years of experience and is a trusted partner to more than 500 hospitals and 30,000 medical practices.

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