HosPortal
CONNECTED HEALTHCARE SOLUTIONS

How Royal Hobart Hospital transformed rostering with HosPortal's automated AI rostering feature

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Introduction

At HosPortal, we focus on solving meaningful problems with practical solutions. Royal Hobart Hospital (RHH), a valued customer, had already been using our original automated rostering algorithm to streamline their Consultant and Junior Medical Officer (JMO) rostering. While this had significantly improved their workflow and worked well, there were complex features our longstanding algorithm could not assist with. For example, complicated patterns of many shifts over many days, or complex conflict rules.

Our team committed to build a world first cutting edge AI rostering toll capable of examining 1000s of possible roster outcomes, and choosing the best one meeting any number of complex rules and patterns. Our plan: to redefine what's possible in rostering, and future-proof this for the evolving needs of our current and future customers.

When RHH attended our July 2024 webinar, they saw an opportunity to enhance their rostering again. They reached out to test our AI functionality, starting with their JMO rosters. After seeing positive outcomes, they expanded the implementation to their consultant rosters.

The results speak for themselves. RHH reduced their rostering time from **4 days to just 4-5** hours. They achieved compliance with complex rules, handled last-minute changes effortlessly, and set a new benchmark for efficiency in healthcare operations.

This transformation wasn't accidental. It was the result of a 12-month development process, a collaborative partnership with RHH, and a relentless focus on delivering measurable outcomes.

The challenge

RHH's rostering process was complex and time-intensive, requiring significant manual effort to meet the needs of multiple departments while ensuring compliance with various rules.

HosPortal currently permits 4 different types of rules:

1. Shift conflict rules – where a single user must not be on two specified shifts – for example, a user can't work a morning shift after a night shift
2. Work rules – where a single user has limits on how many shifts they can do over a timeframe – for example, users can't work more than 2 weekends in a row
3. User conflict rules – rules that specify whether two users must or must not work at the same time – for example, two users cannot be on call at the same time as they both care for the same children
4. Leve conflict rules – where leave and shift proximity is not permitted – for example, a user cannot do night duty the day before leave commences

Key challenges for RHH included:

- **Complex rules**: RHH required 14 shift conflict rules, 9 work rules, 5 user conflict rules, and 44 patterns to be implemented. Each rule was critical to ensuring compliance, fairness, and operational efficiency.
- **Manual testing**: Before building their roster, their team spent hours manually checking their roster against their rules, which was both time-consuming and prone to errors.
- **Last-minute adjustments**: Finalising rosters often required rushed fixes, increasing the risk of errors and delays.
- **Time-intensive process**: The entire process took up to 4 days to finalise a draft roster, leaving little room for iteration or improvement.

The solution

HosPortal's AI functionality was designed to address these challenges directly. By working closely with RHH's roster administrators, we developed a solution tailored to their specific requirements. Key elements of the implementation included:

1. **Custom rule implementation**: All 14 shift conflict rules, 9 work rules, 5 user conflict rules, and 44 patterns were implemented to ensure the AI could handle RHH's unique requirements with precision.
2. **Collaborative effort**: The success of this project was driven by close collaboration between RHH's roster administrators and our customer success and development

teams. Their input and feedback were critical to ensuring the solution met their needs.
3. **Rapid support**: Our team was on standby throughout the process, providing prompt guidance when required to keep the project on track.

AI-driven efficiency: By leveraging our AI, we reduced the time required for RHH to review and finalise their draft roster from 4 days to just 4-5 hours.

What worked well

Several factors contributed to the success of this implementation:

- **Comprehensive rule implementation**: All required rules and patterns were successfully implemented, ensuring the AI could handle RHH's complex rostering needs.
- **Client alignment**: Pre-alignment on roster sequencing helped avoid unnecessary delays and confusion, keeping the project on track.
- **Collaborative partnership**: The strong working relationship between RHH's roster administrators and our customer success and development teams ensured the solution was tailored to their needs.
- **Time savings**: The AI functionality reduced the client's review and finalisation time from 4 days to just 4-5 hours.
- **Long-term relationship**: As a long-time customer, RHH trusted us to deliver, and this trust was key to the project's success.

The results: A 90% time reduction

By the end of the project, RHH had a fully functional, AI-driven rostering system that delivered measurable results:

- **Time savings**: Rostering time reduced from 4 days to 4-5 hours—a **90% reduction**.
- **Accuracy**: The AI successfully implemented all required rules and patterns, ensuring compliance and fairness.
- **Flexibility**: The system allowed for adjustments and iterations without significant delays.
- **Client satisfaction**: RHH was highly satisfied with the speed, accuracy, and support provided throughout the process.

Key takeaways

1. **AI can deliver significant efficiency gains**: When implemented correctly, AI can drastically reduce time and effort while maintaining accuracy.
2. **Collaboration is critical**: A strong partnership between the client and our team ensured the solution was tailored and effective.
3. **Alignment saves time**: Pre-alignment with the client on sequencing and expectations helped avoid unnecessary delays.
4. **Support drives success**: Having a responsive development team on standby ensured the project stayed on track.

Conclusion

The Royal Hobart Hospital case study highlights the value of HosPortal's AI functionality in addressing complex rostering challenges. By working closely with RHH's team, we delivered a solution that significantly reduced their rostering time by 90%, improved accuracy, and provided the flexibility they needed to adapt to last-minute changes.

This project demonstrates how technology, when combined with human expertise, can transform healthcare operations. If your organisation is looking to streamline its rostering process, HosPortal is ready to help.