



How nurse scheduling can be the difference between satisfaction and burnout



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By now, everyone is familiar with the impact that a shortage of nurses has on healthcare organisations. In any hospital, nurses are one of the highest budget components, and not just because of absolute employee numbers. Excessive overtime and the stress associated with it increases costs twice: first with the increased rate of pay, and second with [increased turnover](#). More importantly, tired nurses make errors that can have real consequences for the patients they treat.

Scheduling nurses is not easy. Like almost every industry employing hourly workers, nurses are challenging to schedule. But there are [additional constraints](#) beyond just slotting employees into timeslots, including:

- Regulations regarding the number of hours a nurse can work in a week
 - Regulations about the amount of rest required between shifts
 - Shifts continuing longer than expected, which reduces the time available for rest before the next available shift
- The need to provide 24/7 coverage

Not surprisingly, manual scheduling is time consuming. In [one study](#), it took staff four hours every week to prepare a team's schedule. Furthermore, it's challenging to create schedules more than one to two weeks in advance, despite the desire by nurses to know their schedule earlier in order to make accommodations for their personal lives.

Nurses are human beings, who have families and lives outside of work.

Manual scheduling is not always fair

One issue associated with manual scheduling comes from the tendency to inadvertently penalise some individuals. In most cases, this is not likely malicious behavior. Humans are just bad at randomisation. Just try to create a random sequence using the digits from 1-4. Chances are, after about a dozen digits you'll probably find yourself repeating a pattern. We crave order, and as a result we sometimes fall back to familiar patterns to make things easier.

The same holds true when scheduling people for shift work, which means that some people end up on night shifts more than others, resulting in issues like [long-term insomnia](#).

What goes into a fair schedule?

According to [American Nurse Today](#) there are several scheduling practices that should be avoided:

- Working more than three consecutive 12-hour shifts, four consecutive 10-hour shifts, or five consecutive 8-hour shifts
- Rotating shifts (from days to nights or vice versa) within the same 24-hour period
- With the exception of 12-hour shifts, rotating shifts with less than twice the number of hours of a standard shift in between
- Excessive consecutive hours (for example, a 16-hour double shift)
- Overtime

These practices should form the basis of a set of constraints for any balanced nurse scheduling system.

A real-life example

This scheduling problem is so well known that it actually has a formal name in computing and operations research: the [nurse scheduling problem](#). Not surprisingly, given its academic importance, there are many academic studies investigating potential solutions. In a study published in [Science Direct](#), researchers were able to build an automated scheduling program with dramatic improvements over the traditional manual scheduling process, including:

- A 30% reduction in overtime scheduling
- Elimination of an average of 4 hours of manual scheduling
- An increase in scheduling fairness, with fewer nurses working extreme numbers of shifts (as low as three or more than ten shifts in a week)
- An increase in the minimum number of hours worked per nurse, as well as a dramatic decrease in the number of maximum hours worked

What about homecare scheduling?

Similar challenges arise for nurses working in a homecare role. In fact homecare is even more complicated as we need to take travel time into account. In academic circles, this problem is known as the [travelling salesman problem](#) but it could just as easily be called the traveling homecare nurse problem. The goal with homecare scheduling, in addition to the fairness criteria defined earlier, is to ensure that nurses [minimise travel time](#), ensuring that they can see as many patients as possible while also minimising stress. Again, automation can lead to dramatic improvements in operating results.

Conclusion

Ensuring fairness, consistency and uniformity is not just a nice thing to do, but it can help your organisation get the most from your nurses. Recognising that there are options beyond manual scheduling will put your team on the right path to success.

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