National Laboratory Engagement Group

Best Rostering Workshop Report

This workshop was sponsored by the National Laboratory Engagement Group (NLEG) a partnership programme between the District Health Boards, New Zealand Blood Service and the New Zealand Medical Laboratory Workers Union.

Healthy rostering is an important aspect in the maintenance of health and safety in any workplace. A healthy roster should observe the principles of best practice rostering which are based on maintaining the health and safety of one's employees.

THE RESEARCH

The aim of the workshop was to learn. By the end of the day it was hoped that participants would take away information about the impact of shift work and fatigue on a workplace and be encouraged to use best-practice rostering principles when writing rosters.

To inform participants Dr Deborah Powell presented a summary of research by Sarah Jay, a Massey University researcher at the Sleep-Wake Centre in Wellington, who has been studying the effects of shift work and irregular sleep patterns on employees.

Fatigue is both mental and physical. It is an occupational hazard that must be managed as we would any other hazard in the workplace. Fatigue is multifaceted and can be the result of insufficient sleep or being awake for long periods of time. Shift work is a major contributor to disrupted sleeping patterns and is described as 'any pattern of work requiring an employee to alter his or her sleep patterns'. This includes morning, afternoon, and night shifts and periods of on call.

It is normal for one's circadian rhythm to fluctuate throughout a 24-hour day. Circadian clocks are synchronised by external clues. At certain times of the day we are biologically programmed to perform at our peak and at other times we are programmed to shut down. There are obvious implications for those employees working late at night and early in the morning. Most people do not adapt easily to shift work and studies have shown that throughout the day our core body temperature changes and the lowest point corresponds to the lowest point in productivity. At 3am or 4am people hit a wall. Most people don't have the ability to flip their body clock to make one fully functional, and unfortunately for some coming off night shift, the core body temperature minimum usually coincides with the end of a night shift at around 5:30am.

Deborah also discussed shift work and sleep patterns. Employees who work shifts struggle to initiate and maintain sleep during the day. This can be due to both personal and domestic obligations and they usually experience sleep loss. The quality of sleep during the day is not as great as that during the night because of the above reasons as well as one's own internal alarm clock waking the body up and shutting it down naturally.

Lack of sleep and poor sleep derived from sleeping at inappropriate time's leads to cumulative sleep debt. An employee doing night shifts must have sufficient recovery time after nights in order to minimise fatigue. If one is suffering from sleep loss, it affects both behaviour and performance. Often the employee will think they're performing well when in fact they're not. An analogy is drawn between such an employee and a person who has had too much to drink; they often think they are fine to drive, whereas in actual fact they're not. An employee's perception of his or her own performance may not be on par with reality.

Shift work in some industries and professions cannot be avoided and fatigue is inevitable. There are, however, ways in which fatigue can be managed. There are levels of management involved in mitigating the effects of fatigue. The Fatigue Risk Management System is about minimisation rather than elimination and involves several layers of defence against fatigue-related risk. With the system in place, it will require a number of defences to fail for an incident to occur. The levels are:

- **Level 1**: This is addressed by rostering and service-type rules. Best practice rostering ensures adequate opportunities for sleep. It also pays attention to the length of shifts, break times, etc. It cannot be solely about rostering, however, as service-type rules should also aim to mitigate instances where employees may not be able to take their breaks, or if personal circumstances make it so that it is unsafe for the employee to be rostered for work.

- **Level 2:** There must be processes for confirming that adequate sleep has been obtained.

- **Level 3:** There must be processes that detect behavioural symptoms of fatigue e.g. someone doing a night shift may have obtained good sleep during the day, however anyone working at 3am or 4am is going to feel fatigued. This must be managed.

- **Level 4:** There must be processes for detecting fatigue related errors.

- **Level 5:** There must be processes for investigating fatigue related errors.

The success of the Fatigue Risk Management System is the responsibility of both employers and employees. Employers must ensure that rosters give workers adequate time to recover between shifts and employees must report fit for work and inform the employer if they don't feel safe.

What does a good roster consider? There is no one perfect roster, but a good roster considers the following:
- Timing of shifts.

- Takes into account successive shifts. The more an employee does, the more likely they are to be accumulating sleep debt.

- The duration and timing of breaks between shifts. Breaks during the day are not the same as breaks during the night for sleep.

- On call needs to be factored in. Although an employee may not come in, they have still had a less than optimal night's sleep. If called for advice/or to return to work the disruption may be as significant as having worked the night and risk (driving) at least equivalent.

- Rosters cannot be the only defence. They are very important, but in order to have the best risk management system, it needs to take into account all of the levels of defence.

Both employers and employees should watch out for the signs and symptoms of fatigue: it is a health and safety hazard. People should be more aware of how fatigued they are in themselves and in others. There are also *temporary* measures that can be taken against the symptoms of fatigue. These are:
- Strategic use of caffeine.
- Working with someone else.
- Taking a break.
- Having a nap, mid-shift or prior to driving.
- Task reallocation (boredom contributes to fatigue).

In summary, fatigue is the result of many things – being awake for long period's especially overnight or inadequate sleep. It is a health and safety hazard which cannot be eliminated, but can and must be managed.

GUIDELINES TO BEST ROSTERING PRACTICES

Workshop participants were asked to identify what best rostering practice would look like in an ideal world.

They included:

- Adequate FTE to meet the service/work level
- All Shifts staffed for volume of work

- The right skill mix
- Length of shift should be no longer than 8 hours
- Money to number of people / not more money with same number of people
- Recovery time no less than 24 hours
- Circadian rhythm – no short break changes between all shifts, and not rostering against circadian rhythm –recovery time of greater than 9 hours.
- More people to decrease the frequency of shifts
- Night shift the third shift
- Any calls after 2400 require a 9 hour break after the call.
- Critical mass – minimum baseline
- Frequency of unsocial shifts restricted to 1:5 rotation
- On-call – fair distribution
- No more then 1:4 consecutive days on-call
- No more than 2 shift types per pay period
- Sufficient staff to cover leave
- At least two staff rostered on at all times, not the same people together all of the time.
- If on PM shift – no call.
- The ability to take naps whilst on shift.
- Max 5/7 days worked in a row
- Max 3/7 pm or night shifts in a row
- **(Permanent out of hours staff) ***

*not a system supported by the evidence and best practice

BARRIERS AND BENEFITS OF BEST ROSTERING PRACTICE

Participants were asked to draw up the barriers and benefits of best rostering practice.

Barriers

- Both the staff members and the employer can be resistant to changing from the current roster and rostering pattern. This has become the accept norm.

- Fixed hours staff. Whilst there may appear to be adequate FTE it can be difficult to roster rotating shifts when there is only a small pool of staff are available to work across all shifts and weekends.

- Insufficient compliment of staff. This involves the skill mix, availability due to fixed hours and the ever increasing complexity of work, resulting in a lack of Laboratory

workers suitable to participate in the rostered out of hours, on-call and weekend shifts, but also to enable healthy breaks between shifts and healthy rostering.

- The employees desire to earn more money by participating in more shifts and out of hours work was a barrier to healthy rostering. There were also other costs identified as barriers, the cost of employing adequate staff and the increase in salaries; however this may be offset by the reduction in overtime and penal rates.

- Personalities. There can be a high degree of ownership of the roster by the roster writer. Often rightly or wrongly there can be a perceived preference given to certain employees for certain shifts. There is also sometimes an element of power and control over rostering.

- Inherent rigidity in the rosters. The participants identified that some rules were set in stone, with timings of shifts determined externally; there is also the inadequate current complement of staff to roster any other way.

- We only know what we know; writing rosters can be a difficult and unenviable task, which is complicated by the fact that there is not normally any training, or set guidelines to follow, or refreshing of the rostering process.

Benefits

- Staff are satisfied by the roster. The roster writer has received education on best rostering practice and applied these principles when writing the roster. The roster is planned through engagement with staff for input and preferences. The process is transparent, fair and equitable, with clarity of expectations provided to laboratory workers.

- There is a roster template to increase predictability and forward planning for Laboratory workers.

- Refreshing of the roster process with feedback/ input from the staff participating in the roster.

- Well rested staff, with increased flexibility in their personal life.

- Adequate breaks on night shift will decrease the pressure to keep going.

- Clear guidelines on working shift work and best rostering principles given at orientation to all new staff members.

THE WAY FORWARD

"Rome wasn't built in a day" and similarly rosters cannot be changed overnight. Participants were challenged to commit to continuous improvement of their rosters and the health, safety and well-being of their staff and colleagues.

It was noted that the majority of participants have had no previous training in roster writing and were unaware of the extent of physiological harm caused by unhealthy rostering. Whilst participants had taken the key messages on-board and are keen to initiate changes, it was generally felt that those that had not attended and the team back at their place of work may be more dubious and reluctant to implement changes.

The helpful suggestion was made to slowly and incrementally integrate these changes, which would give employees enough time to accommodate and turn their minds to safer rostering practices. In the interests of safety, staff members need to understand that the organisation's needs must be met, as well as the patients'. It is the responsibility of the manager to ensure safe rostering and if they fail to do so, there can be legal implications.

The key is to manage change when there is resistance to it. It needs to be managed sensitively by taking the time to educate and engage with staff. Ways in which to do that involve:

- Informing staff and keeping them informed
- Negotiating with staff
- Education
- Keeping in mind one's duty of care to both staff and the employer
- Prioritising
- Instigating timeframes and keeping with them
- Engaging with employees
- Making incremental changes
- Identifying future goals

The participants of the workshop were invited to take their resources and learnings back to their place of work, to share widely with their colleague's, teams and roster writers. They were then tasked to look at making one change to their roster, and report back to NLEG on success, barriers and progress.

Suggestions for roster writers:

- Start the conversation with your team and employer about the benefits of healthy rostering. Provide education and promote active discussion about options for improvement e.g. always roster in a forward manner with regard to circadian rhythm.

- Identify the actual problems with your roster and make a plan of how and what you can change.

- Refresh your roster process regularly, just because this is the way it has always been done, does not mean it is the right or only way, talk to the staff who work the out of hours shifts and on-call for ideas on what are the important things that need changing.

- How much disruption is there to each staff member? How can you limit the number of shift changes for one person in a week?

- Staggered start and finish times. Look at whether they are necessary and efficient. If they are to meet clinical needs ensure that these are constantly reviewed.

Have the conversation with management over the issues you are facing in being able to implement a healthy roster in your laboratory. Any changes that involve financial resourcing such as employing more staff, will need to be discussed with the employer's accountant or finance department, find out what funds are available and if inadequate whether those that have been allocated already can be redistributed. This will aid in identifying whether funding is a significant barrier to healthy rostering, and if so, involving and working with the COO is a possible option. Participants should also think about what their future goals are and where they want to end up. Having clearly identified goals and sharing these with staff will make the transition to change easier on everyone. Identifying problems now will also enable participants to start thinking about how to manage those risks. Keeping staff involved and informed will foster a sense of involvement in the process, which will facilitate the transition to best practice rostering.

The Local Laboratory Engagement Groups (LLEG's) were also tasked to feedback to the National Laboratory Engagement (NLEG) one change their laboratory has made to a roster and how it had worked, with the aim of any feedback being available as a resource to share across the LLEG's and assist them in continuing to improve their rosters.

Change can be a difficult thing to manage, but if we start at the top and involve everybody it can be implemented successfully and benefit all involved.

We look forward to receiving any feedback on the workshop, your progress, any difficulties you may experience, and of course, your successes. Good luck!