



Managing Fatigue and Best Rostering

Plain Language Advice

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Introduction

Rostering directly impacts on the health and safety of employees, and through them the productivity and quality of outcomes for patients. Following on from our Best Rostering Workshop, agreed best practice principles and subsequent advice, we have been asked to provide some “plain language” advice on the matter to assist with the implementation of rosters that not only provide for safe and healthy rosters, but in compliance with MECA and Health and Safety legislative requirements.

It is an employer’s health and safety obligation to ensure harm is identified and eliminated or minimised. Where harm is identified but unable to be eliminated, management of that risk is imperative; it must be monitored and reassessed at appropriate intervals. Opportunities that arise to minimise or eliminate harm must be taken. It not acceptable identify a risk that cannot be eliminated (such as having to provide a 24/7 service), but take no action to minimise the risk.

It is also important to note that financial considerations do not trump health and safety concerns. The revision of the Health and Safety legislation raises the imperative to eliminate risk and /or manage risk by imposing higher penalties in the event of failure. Recent and pending prosecutions by Work Safe are reinforcing the point that employee safety is not an optional extra but a core function of any business. If a risk is identified and not minimised or eliminated (on the basis of cost for instance), the employer may be exposed to legislative remedies should that risk result in harm to the employee. None of us of course want to get to that point: in health our core business is to care for each other with a goal of health and wellness at the centre of everything we do.

Employees also have a responsibility to ensure they act in an appropriate manner. Being provided with adequate breaks but spending them in a night club rather than resting (for instance), would not be acceptable behaviour. Employees must take health and safety seriously and use the provisions made to ensure best practice for that purpose: for instance ensuring home sleeping arrangements provide for best possible daytime sleep after nights (turn cell phone off, dark curtains, etc.).

Harm from roosting comes in the form of physiological e.g. the impact of fatigue and failure to gain sufficient recuperative and recovery time for an employee to be kept safe (from crashing when driving home for example). There are also health risk associated with shift work such as higher risk of insulin resistance and cardiovascular disease. So when taking a pragmatic approach to what is best for people and how to manage the risks inherent in a 24/7 service, where do we start?



The MECA states as a preamble to the hours of work clause

The employer will take all practical steps to prevent harm occurring to employees from the way work is organised. In particular the employer will monitor on call arrangements and the frequency and duration of call outs and shall take this into account when considering an employee's continued fitness to work safely during normal hours of work. If possible fatigued employees shall be authorised to not attend duty or finish their normal duty early without loss of pay for any period of authorised absence.

“All practical steps” would include providing a roster that ensures adequate rest and recuperation between rostered duties, be they on call or on duty as well as periods of work itself. The preamble goes on to reinforce this by noting the need to monitor on call arrangements, call outs and the impacts these have on fitness to return to work. The 9 hour break between a call back and a return to work for instance is well recognised as required to ensure people have had sufficient a break. If someone was on rostered shift until 0300hrs, we would not expect them to return to work at 0800, so why do we expect them to do so when they have been at work as a result of a call back till 0300hrs?

The preamble makes it clear that rest, not payment is the mechanism to manage the risk insufficient break periods have to employee health and safety.

Length of Shift

The guidelines provide “**Length of shift should be no longer than 8 hours**”. Human beings function efficiently to a maximum of 5 hours; rest breaks and meal periods extend the working day to 8, however longer than that and people physically start to “wilt”. So does working longer than 8 hours constitute a risk and if so how much of one? Is 9 hours for instance such a risk as to be too unsafe? No, of course it isn't: the irregular reasonable use of overtime is accepted practice but if overtime starts to become excessive then health and safety issues will arise.

On-call and Calls after 2400

On call is effectively overtime. It is worked in excess of 8 hour a day or 40 hours a week; so what amount of on call or call back is reasonable? The guidelines note that “**On call should be considered as on duty when considering the impact of fatigue.**” This reminds us that being on call does have an impact; it is “on top of” our normal day.

On call impacts are not only about when a call back might fall but how long someone is working when rostered on call. If on call at the end of the day and at work at midnight for instance, then an individual is likely to have been awake anywhere up to 18 hours. Research has shown that at 18



hours awake, someone is performing at the same level as too drunk to drive, so is it safe for them to get in a car at 2400hrs and drive home? One way to manage this risk is to provide a taxi to get home and if necessary back to their car the next day. If this level of work is more frequent, time to think of a pm shift.

And if called again after 2400, we need to be more aware of managing the risks that are clearly present, not only at the time of that 0300hrs call back but afterwards as people need time to repay any sleep debt they have accumulated.

Recuperation requirements are reflected in this regard in the statement that **“Any calls after 2400 require a 9 hour break after the call.”** If someone is up in the middle of the night then their sleep is disrupted and they should have the opportunity to repay that accumulated sleep debt by sleeping. To not get that rest means that the employee will be tired and if having to work the following day, even more so as the day goes on.

People also sleep less well when on call, even when not called out. Most will report “waiting for the phone to ring” indicative of less deep sleep (and therefore less restorative) when on call as compared to normal sleep patterns. This means we need to remember how many consecutive days people are rostered.

Max 5/7 days worked in a row

Those rosters that cover an entire weekend require even deeper consideration and monitoring as to health and safety risk. First the guidelines provide for a **“Max 5/7 days worked in a row”**. This reflects MECA which provides for (usually) 2 consecutive days off a week because in a 7 day cycle, 48 hour break is necessary to ensure recuperative time for an individual: so what of the work we do over and above the 5 days of the week.

Again are a few hours on Saturday or maybe Sunday high risk: no, we would be awake anyway, just at work rather than taking personal (and therefore better recuperative) time (also see unsocial hours below). But what if up into the evening or more critically overnight. If this occurs we are presented with compounding impacts; more than 5 days worked, more than 8 hours in a day and anywhere up to potentially 12 days in a row. If employees working the weekend are up all day and into the evening, and being expected to undertake on call overnight, then yes this increasingly presents an unreasonable risk.



No More than 1:4 consecutive days on-call

And there is also the issue of “how often”? We are balancing physiological risk with recuperative time as well as high frequency resulting in potentially compounding impacts. The guidelines state “**No more than 1:4 consecutive days’ on-call**”. 1:4 refers to within any 4 consecutive weekends only one should be worked. For a safety perspective we are ensuring adequate time between rostered duties; if for instance someone worked the next two weekends but then had 6 consecutive weekends off, risk arises out of being rostered effectively 19 days without a break is significant. Even if a weekend on - weekend off - weekend on scenario, we are looking at 12 days rostered, 2 off, 12 rostered. Losing 2 consecutive days off, should not happen more than once a month hence the 1:4 consecutive provisions when applied in this scenario. However the same applies if rostered on call week day nights. Again if thought of from a health and safety perspective, on call and potentially called out overnight might be manageable once, but not if a repeat a second night. Time to recover is the operative goal here.

Recovery time and frequency of shifts

Two final provisions that reflect the realities of circadian rhythm as well as genuine recuperative time are:

- **Recovery time no less than 24 hours (between shift changes):**
- **Frequency of unsocial shifts restricted to 1:5 rotation**

Circadian rhythm means forward rotation of shift changes are best (i.e. days to afternoons, to nights back to days) and between those shift changes a 24 break allows for recovery as well as adaptation. The unsocial shifts are largely those that fall outside Monday to Friday during “normal” hours. In order to maintain wellness, we need quality personal time. Whilst this means different things to different people, family time is an obvious example. The value society places on this part of our lives is further reinforced by a number of provisions in NZ including flexible working arrangement legislation. Family or not, we all need personal time to maintain wellness which in turn has a material impact on our capability when at work.

Finally, and quite specifically: nights. These duties pose obvious risk; hence some focus above on rosters that have people up at night. Doing nights in addition to ordinary hours such as on call rosters tend to require is a double whammy from a health and safety perspective, but regular rostered night shifts also pose risks. They are a required part of 24/7 services in many instance so how do we manage this risk. The evidence on effects of night shifts is considerable including how



many “sleeps” are required to recover after periods on nights. First remember we need to consider time awake, not simply at work when fatigue is the issue.

As a rule of thumb no more than 4 consecutive nights of shifts should be worked as sleep debt accumulation critically impacts on performance at this point. Night shifts should not exceed 8 hours for similar reasons. However if on night shift and sleep some of the night, then less debt is accumulated and long night shifts or 5-6 consecutive shifts may be possible. And yes, people should consider napping at night; it reduces sleep debt and as long as the sleep wake period is taken into account 30-40 minute nap can give a significant alertness boost to people on nights.

Three sleeps following 4 night shifts is evidenced as being required to reliably repay sleep debt, and 2 sleeps after 2 consecutive night shifts. After 3 night shifts the evidence is less definitive and would depend on whether some sleep is achieved during those night shifts for instance. It might for instance be better to have 3 nights where napping is possible and therefore only require two days off to recover, depending of course on intensity of work and napping facilities.