

Rostering Tips and Tools – Medical

Factsheet 3

Level 1: Ensure Adequate Sleep Opportunity

Level 1 within the model is predominantly concerned with planning work hours to minimise fatigue-related risk.

Critical Question: do the working time arrangements provide sufficient sleep opportunity for recovery and not have people awake for too long?

Rostering

To minimise the likelihood of fatigue, the design of working arrangements needs to provide an adequate opportunity for sleep and avoid staff members being awake for excessive lengths of time.

- **Shift duration:**
 - There is an increase in fatigue as a function of the length of the individual shift.
 - Accident risk has been demonstrated to increase nearly exponentially with cumulative hours at work and, at the twelfth hour of a shift, the relative accident risk was double compared to the first eight hours of the shift
 - The maximum hours of duty (ordinary hours) for a Resident Medical Officer are 12 hours and 30 minutes, inclusive of a unpaid meal break (MOCA 5). Shift length should not extend beyond 14 hours. Ideally shifts should be 10 hours or less (see Figure 4).
- **Consecutive shifts:**
 - In addition to consecutive hours spent at work, fatigue increases across consecutive shifts.
 - The increase in risk is more rapid with respect to consecutive night shifts, but is still present in consecutive day shifts.
 - Maximum rostering, as specified in the Medical Officers (Queensland Health) Award – State 2015 (e.g. RMOs to have four rostered days off in any 14-day period, two of which must be on consecutive days), must apply.
- **On Call Work:**
 - Frequency of on-call periods needs to be managed to provide adequate recovery sleep opportunities
- **Time of Day:**
 - Day-time sleep opportunities can be significantly shorter compared to sleep at night
 - It is recommended that the number of consecutive night shifts should be kept to 3 or 4 as a maximum (see Figure 5). It is noted however, that in some circumstances an increased number of consecutive nights may be rostered, consistent with MOCA5. In these circumstances, fatigue risk should be monitored and appropriate fatigue risk management countermeasures implemented where required.
- **Short break duration:**
 - The literature demonstrates that there is a direct relationship between break duration and the amount of sleep obtained between shifts.
 - Breaks less than 10 hours may not provide adequate sleep opportunity.
 - Minimum breaks, as specified in MOCA5 (e.g. RMOs having at least 10 consecutive hours off duty between shifts), must apply.
 - No day shift should immediately follow a night shift.

Level 1 Tools:

The FRMS roster risk evaluation matrix can be used to evaluate risk associated with nine critical dimensions of working time arrangements. Each of the individual dimensions, and the overall risk score have been demonstrated to be associated with increased fatigue-related risk, and increase of fatigue related occurrences.

		Low risk (1 point)	Moderate risk (2 points)	High risk (3 points)	Points
1	Total hours of work	<50 per week	50 to 70	> 70	
2	Shift length	10 or less hours	14 or less hours	More than 14 hours	
3	Time between breaks	<2 hours	<5 hours	5 hours or more	
4	Anticipated overtime	<10 hours	>10 hours	>20 hours	
5	On call/recall	<3 days per week	>3 days per week	7 days per week	
6	Short break length	12 hours or more	10 hours or more	<10 hours	
7	Long break length	2 days per week	1 day per week	<1 day per week	
8	Shift rotation	Forward/consistent	Forward/inconsistent	No stable speed or direction	
9	Night work	None	<4 per week	>4 per week	
TOTAL INHERENT RISK SCORE ▶					

Figure 4: Roster Risk Evaluation Matrix (Source: Queensland Health FRMS Resource Pack 2018)

Using the roster risk evaluation matrix, all rosters can be evaluated against each of the nine dimensions of risk. A points value is then assigned for each dimension, which is then tallied to produce an overall level of fatigue-related risk inherent within the roster design.

Generally, if the total points' score of a roster is greater than 25, an extreme level of inherent fatigue-related risk is present, and the working time arrangements should be changed to reduce the overall score risk score. If a total risk score is greater than 13, or if any dimension score places it as 'high risk', risk mitigation strategies are required (see Figure 5).

If roster risk evaluation highlights that rosters may be at risk of inducing fatigue, the first action to be taken is to re-examine and attempt to re-work the rosters to address dimensions most at risk. This may require input from your Clinical / Unit Director or another staff member.

Level 1 Controls:

Dimension Score	Total Score	Controls (actions)
All low or moderate risk	13 or less	Nil action required
One or more scores as high risk	13 or less	High risk dimension must be re-negotiated
Any level of risk	>13	Roster is at risk of inducing fatigue – if there are no clear solutions available from roster re-organisation (i.e. by focusing on correcting high risk dimensions), discuss with your line manager or Directorate E/DMS or accountable officer what mitigation strategies are required (e.g. locum staff).
More than one scores as high risk	>25	Roster is at risk of inducing fatigue – focus roster re-organisation on high risk dimension/s. If there are no clear solutions available from roster re-organisation, discuss with your line manager or Directorate E/DMS or accountable officer what mitigation strategies are required (e.g. locum staff).

Figure 5: Level 1 Controls