

Proactive Management for Individuals Level 2 and 3 Tools and Controls - Medical:

Factsheet 4

Level 2: Assessing Actual Sleep and Wake Times

Level 2 within the model relates to the individual wake and sleep times on any given day. Both sleep and wake are important determinants of fatigue-related risk and both need to be assessed and actions taken where thresholds are exceeded. Sleep in the prior 24-hour period is a critical factor in mediating fatigue-related risk and errors. Thus, assessing sleep will be a part of the level 2 control.

Critical Question: Am I safe to work – have I had enough sleep recently, and have I not been awake for too long to be safe for myself, my colleagues and my patients?

Level 2 Tools:

Both the length of time that an individual has been awake and the amount of sleep they have had in the last 24 and 48 hours are key determinants of fatigue risk.

This can be modelled with the three variables:

- (X) the amount of sleep in the prior 24 hours
- (Y) the amount of sleep in the prior 48 hours
- (Z) the length of wakefulness from awakening to end of work



Figure 7: Individual Fatigue Likelihood Variables (Source: Queensland Health FRMS Resource Pack 2018)

Taking this information, an Individual Fatigue Likelihood Score (IFLS) can be calculated using the table below:

INDIVIDUAL FATIGUE LIKELIHOOD SCORE						SCORE	
STEP 1: Sleep in prior 24 hours	Sleep Points	≤ 2hrs 12	3hrs 8	4hrs 4	≥ 5hrs 0	4	
STEP 2: Sleep in prior 48 hours	Sleep Points	≤ 8hrs 8	9hrs 6	10hrs 4	11hrs 2	≥ 12hrs 0	2
STEP 3: Prior Wake Count the total hours you will have been awake for at this exact moment. Deduct the number of hours of sleep in the last 48 hours from this. The result is the score (negative results equal a score of zero). For example, if you had 10 hours sleep in the past 48 hours and you have been awake for 12 hours = 2 points						3	
Total points to determine your score						9	

Figure 8: Individual Fatigue Likelihood Score

In this example, the doctor has had 4 hours sleep in the prior 24 hours, 7 hours sleep in the 24 hours prior to that (total 11 hours). The time is now 8pm and the doctor woke at 6am (14 hours of wakefulness).

Score	Fatigue Risk
0	Low
1-4	Moderate
5-8	High
9+	Extreme

Figure 9: Fatigue Risk Based on IFLS

Level 2 Controls:

With a score of 9, this clinician has a fatigue risk of 'extreme':

Risk Level	Controls (actions)
Low	No specific controls necessary (except in presence of higher level indicators of fatigue – i.e. levels 4-5)
Moderate	Initiate moderate fatigue-risk mitigation actions: <ul style="list-style-type: none"> Utilise individual controls
High	Initiate high fatigue-risk mitigation actions: <ul style="list-style-type: none"> Discuss with line supervisor/consultant on-call/unit director whether fatigue leave can be taken Record fatigue hazard in RiskMan If individual must continue to work: <ul style="list-style-type: none"> Utilise individual, team-based or unit-specific controls
Extreme	Intolerable risk – no individual to work at this threshold unless risk to patients is unacceptable <ul style="list-style-type: none"> Discuss fatigue risk with the consultant on-call/unit director to determine how work can cease as soon as practicable. The decision to continue work is made by the consultant on-call or unit director, based on a risk/benefit analysis to patient safety and care. If the situation cannot be resolved then EDMS/on-call medical superintendent is to be contacted. Record fatigue hazard in RiskMan If individual must continue to work – initiate extreme fatigue-risk mitigation actions: <ul style="list-style-type: none"> Utilise individual, team-based and/or unit-specific controls No procedural work to be undertaken without supervision Frequent contact with on-call consultant to double-check decision making

Figure 10: Level 2 Controls

It is the responsibility of each Clinical / Unit Director to audit instances of extreme fatigue risk and ensure that these are managed appropriately within their own unit. Clinical staff need to be reassured that escalating fatigue risk issues is the safest and most patient-centric approach to take and retribution for speaking up will not be encountered.

An example of individual, team-based or unit-specific controls are included as Appendix 5.

Level 3: Assessing Behavioural Symptoms of Fatigue

Even though an individual's roster and sleep history might seem acceptable, it is still possible that cumulative forms of fatigue can impair performance and give rise to elevated levels of fatigue-related risk.

Critical Question: Am I safe to work – am I feeling okay or am I exhibiting symptoms of fatigue? Is my colleague exhibiting symptoms of fatigue?

Level 3 allows for the identification of these individuals and for the appropriate steps to be taken to mitigate the risk.

Level 3 Tools:

There are a number of tools that can be used, by Individual Medical Officers or Clinical / Unit Directors to assess behavioural symptoms of fatigue.

The Samn-Perelli Fatigue Checklist is an objective self-assessment tool that can be used throughout a shift, where an individual ranks themselves on a seven-point fatigue scale

Rank	Risk Level	Description
1	Low	Fully Alert
2		Very Lively
3		Okay
4	Moderate	A little tired
5		Moderately tired
6	High	Extremely tired
7	Extreme	Completely exhausted

Figure 11: Samn-Perelli Fatigue Checklist

Objective observational tools may be utilised by supervisors or individual medical officers, to assess their reporting staff members or a colleague. Note that research suggests that an individual's ability to reliably assess their level of sleepiness or impairment does not match actual levels when sleep is restricted chronically (a week or more). Objective assessment of fatigue may assist in the development of workplace awareness of fatigue risk management.

Observation checklist – did the person show any of the following signs of fatigue?					
Physical symptoms		Mental symptoms		Emotional symptoms	
Yawning	<input type="checkbox"/>	Difficulty concentrating	<input type="checkbox"/>	Quiet and withdrawn	<input type="checkbox"/>
Heavy eyelids	<input type="checkbox"/>	Lapses in attention	<input type="checkbox"/>	Lethargy	<input type="checkbox"/>
Eye-rubbing	<input type="checkbox"/>	Memory lapses	<input type="checkbox"/>	Lacking in motivation	<input type="checkbox"/>
Poor coordination	<input type="checkbox"/>	Poor communication	<input type="checkbox"/>	Irritable or bad temper	<input type="checkbox"/>
Head drooping	<input type="checkbox"/>	Lack of situational awareness	<input type="checkbox"/>		
Falling asleep	<input type="checkbox"/>	Errors	<input type="checkbox"/>		

Alertness – did the person show any of the following signs of fatigue?		
Description	Signs	Rating
Highly alert	Feel active, energetic, wide awake, attentive to surroundings, good coordination	1
Alert	Function was out not quite at peak (see above)	2
Mildly fatigued	Awake but not energetic or fully alert. Respond to things as required but requires an effort. Prefer to relax rather than be active	3
Fatigued	Eyes tired, difficulty focussing, irritable, trouble understanding complex instructions, clumsy, unmotivated, errors in speech	4
Very fatigued	Long eye blinks, head nodding forward, fighting sleep, difficult to have conversation, forget what you are trying to say, want to be left alone and lie down, strong desire to sleep	5

Figure 12: Observation Checklist

Level 3 Controls:

Determining fatigue risk then specifies the controls that should be implemented:

Risk Level	Tool Score	Controls (actions)
Low	Samn-Perelli rank 1-3 Highly Alert or Alert	No specific controls necessary (except in presence of higher level indicators of fatigue – i.e. levels 4-5)
Moderate	Samn-Perelli rank 4-5 Mildly fatigued	Initiate moderate fatigue-risk mitigation actions: <ul style="list-style-type: none"> Utilise individual controls
High	Samn-Perelli rank 6 Fatigued	Initiate high fatigue-risk mitigation actions: <ul style="list-style-type: none"> Discuss with line supervisor/consultant on-call/unit director whether fatigue leave can be taken Record fatigue hazard in RiskMan If individual must continue to work: <ul style="list-style-type: none"> Utilise individual, team-based or unit-specific controls
Extreme	Samn-Perelli rank 7 Very fatigued	Intolerable risk – no individual to work at this threshold unless risk to patients is unacceptable <ul style="list-style-type: none"> Discuss fatigue risk with the consultant on-call/unit director to determine how work can cease as soon as practicable. The decision to continue work is made by the consultant on-call or unit director, based on a risk/benefit analysis to patient safety and care. If the situation cannot be resolved then EDMS/on-call medical superintendent is to be contacted. Record fatigue hazard in RiskMan If individual must continue to work – initiate extreme fatigue-risk mitigation actions: <ul style="list-style-type: none"> Utilise individual, team-based and/or unit-specific controls No procedural work to be undertaken without supervision Frequent contact with on-call consultant to double-check decision making

Figure 13: Level 3 Controls