Short title: Fatigue

1. Purpose

The purpose of this statement is:

1.1 To highlight the importance of fatigue risk management in providing safe and effective perioperative care to patients.

1.2 To serve as a resource for clinicians to understand fatigue and its impact on clinical performance and personal wellbeing so that they may adopt measures to avoid fatigue.

1.3 To provide healthcare facilities with recommendations on how to prevent the onset and reduce the impact of fatigue on safe patient care and occupational health/safety.

2. Scope

This document is intended to apply to all clinicians, including trainees, practising anaesthesia and perioperative medicine, and all healthcare facilities, public and private, in which anaesthesia and perioperative services are provided, including all ANZCA approved training sites.

3. Background

The provision of anaesthesia requires a high level of knowledge, sophisticated procedural skills, sound judgement, fast and accurate responses to clinical situations, and the capacity for extended periods of vigilance. The nature of these clinical requirements is such that there may be a necessity to provide anaesthesia out of hours for:

- Prolonged or complex elective procedures that were started during the day.
- Emergencies including life-, limb- and organ-threatening cases.
- Procedures where delay may result in significant morbidity or mortality.
- Obstetric procedures.

Fatigue is the subjective feeling of the need to sleep, an increased physiological drive to fall asleep and a decreased state of alertness.[1 (p.4)] It has been demonstrated to impair vigilance and accuracy of response.[2-4] Decreased performance of motor and cognitive functions in a fatigued anaesthetist may result in impaired judgement,[5] late and inadequate responses to clinical changes,[6] poor communication/empathy[7] and increased errors.[8]

In the interests of patient safety, it is important that anaesthetists understand how to identify fatigue in themselves and others and know their responsibilities with respect to working while fatigued. Employers must be aware of fatigue as an occupational health and safety issue and manage this risk to support and ensure safety of staff and patients and, in addition, to comply with occupational health and safety legislation in their jurisdictions.

Adults require, on average, 8 hours of sleep each night (range 6-10 hours).[3] Fatigue will occur with sleep debt; this sleep debt is cumulative, does not dissipate, and needs to be recovered over a number of sleep cycles. The only way to recover sleep debt is by replenishing it. The quality and duration of sleep

which is possible depends greatly on the timing at which sleep occurs (better sleep is always obtained during our biological night). Factors contributing to fatigue include sleep deprivation, sustained long hours of work, irregular shift work, poor sleep recovery, ageing and pregnancy.

While some of the recommendations below make reference to time, it is acknowledged that duration of work and the total hours worked over a shift are paramount rather than the time on the clock.

4. Recommendations

4.1 Individual responsibilities

4.1.1 Planning

4.1.1.1 Anaesthetists have a responsibility to organise their lives in a way that ensures fatigue does not regularly impact on patient safety. This requires an understanding of the impact of fatigue on themselves and their clinical practice, practice of good sleep hygiene and taking appropriate action if they become fatigued. Anaesthetists have a moral and ethical responsibility to avoid undertaking clinical duties if physical or mental fatigue, stress or ill health, alone or in combination, might interfere with safe patient care.

4.1.1.2 Anaesthetists who are on-call and called in to perform duties at night should consider having at least 8 hours off duty prior to commencing their next clinical commitment if they are fatigued. If it is anticipated that work demands may be such that they will result in significant disturbance to normal rest and sleep, then anaesthetists should ensure that any clinical commitments on the subsequent day are either covered by another anaesthetist or postponed until there has been the opportunity for an adequate rest period.

4.1.2 Awareness

4.1.2.1 Anaesthetists who are involved in shift work, particularly overnight shifts, should be aware that clinical performance may be affected by increasing fatigue due to altered sleep routines, be prepared to call for assistance if fatigued, and implement personal fatigue risk management strategies.

4.1.2.2 Anaesthetists should be aware of, and respond to, symptoms and signs of fatigue. Anaesthetists also have a responsibility to identify fatigue in others so as to prevent potential risk to patients. A toolkit is available in the appendices to the accompanying background paper.

4.1.3 Risk mitigation

4.1.3.1 Minimising the effects of night-time shift work may be achieved by taking a 60-90 minute afternoon sleep prior to the night duty, taking a 20-30 minute nap during the shift, eating proper meals, and sleeping as soon as possible after completing their shift.[9,10] Avoiding caffeine consumption prior to a post-shift sleep opportunity is advisable.

4.1.3.2 Sleep loss-induced deterioration in performance is mitigated by naps (30-45 minutes) and caffeine (100-600 mg) only for the first 24 hours of continuous wakefulness.[11] Naps are followed by a period of ‘sleep inertia’ (drowsiness after waking) associated with reduced performance which dissipates over 15-30 minutes.[12-14] Taking caffeine just before a short nap may be an effective way of mitigating sleep inertia.[10] However, use of caffeine and other stimulants

combat rather than prevent the problem and as such are not recommended for routine use.

4.1.3.3 Other aspects of fatigue risk management in addition to the above include controlled exposure to bright or blue enriched light during extended or overnight shifts.[3]

4.1.4 Recovery

4.1.4.1 Recovery from the night-time shift may include taking a short morning nap of 1-2 hours before getting up and re-establishing normal activities with the aim of returning back to a normal sleeping routine at night.[10]

4.1.5 Long term strategies

4.1.5.1 Long-term work patterns should be based on the following principles:

- Adequate time should be available for leisure activities, exercise, rest and sleep.
- Adequate breaks should be taken during a day of clinical work.
- Recreation leave should be taken regularly.

4.2 Departmental and organisational responsibilities

4.2.1 Healthcare facilities have a responsibility under work health and safety legislation to provide a safe working environment for workers by eliminating risks to health and safety and to minimise those risks that cannot be eliminated.[15-17]

4.2.2 Hospitals should establish processes to facilitate the conduct of non-elective procedures during daytime hours. Surgery should not be started after 10pm unless it is a life-, limb- or organ-threatening emergency.

4.2.3 If it is anticipated that an elective surgical list may need to be extended beyond daytime hours (after 5-6pm), it should have an expected completion time of no later than 10pm.

4.2.4 Anaesthetists should not work in excess of 16 hours in a 24-hour period.[3,18] If anaesthetists undertake elective cases in the evening, they should not be committed to both morning and afternoon lists on the same day as their evening shift.

4.2.5 While recognising staffing levels and hospital coverage requirements may require planned shift durations to be 16 hours, the roster should allow for adequate breaks and at least 8 hours provided for commuting, personal hygiene and rest/sleep before the commencement of the next shift.

4.2.6 Departments, hospitals and private anaesthetic groups should have a management plan to address the short-term consequences of anaesthetists being unavailable for clinical duties because of fatigue following ‘on-call’ work. For accredited departments of anaesthesia, this should not be at the cost of clinical support time within the department (see *PS42(A) Position statement on staffing of accredited departments of anaesthesia*).

4.2.7 Staffing of departments should be planned so that all staff are able to take regular recreation (annual) leave.

4.2.8 Rosters for shift and weekend work should be available with enough lead time to permit planning for leisure activities and sleep recovery.

4.2.9 For shift work, forward-rotating shifts (mornings - evenings - nights) are associated with the least disturbance to normal sleep patterns.[3,12] In departments where anaesthetists are working in shifts, rosters should be planned in a forward-rotating pattern with sufficient overlap between shifts to allow for safe handover (see *PS53(A) Position statement on the handover responsibilities of the anaesthetist*).

4.2.10 Hospitals should establish programs and provide resources, such as those in the appendices to the background paper accompanying this document, to mitigate the risk associated with fatigue. These may include:

4.2.10.1 Provision of resources and training to enable individuals and those around them to recognise signs and symptoms of fatigue and to respond accordingly.

4.2.10.2 Provision of rest facilities, such as a quiet, dark, private space with sleeping facilities that can be used during and/or after a night shift or 'on-call' duties.

4.2.10.3 Safe commuting options, such as a taxi reimbursement scheme, in case clinicians feel too fatigued to drive home. This should be well advertised to staff and easy to access. Minimum reimbursement loads should be included in administrative budgets.

4.2.11 Hospitals should monitor risk factors, levels of fatigue and its consequences. This includes shift lengths and patterns, overtime and critical incidents. Un-rostered overtime should also be monitored and documented. Critical incident reporting systems should develop mechanisms by which data on fatigue can be collected and analysed in a safe and confidential manner. Metrics may include the time of day that the incident occurred, the amount of time since waking and amount of sleep in the previous 24 hours.

4.2.12 Documentation and data collection are critical functions of patient care. Data entry and documentation should aim to capture critical information in the most efficient way so as to avoid diverting attention from direct patient care and contributing to fatigue.

5. Additional resources

There are additional resources in the Background Paper (PG43(A)BP) to assist individuals to recognise fatigue in themselves or their colleagues (Appendices 1, 3 and 4), and suggestions for addressing risks associated with fatigue (Appendices 2, 5, 6 and 7).

This document is accompanied by a background paper (PG43(A)BP) which provides more detailed information regarding the rationale and interpretation of the Guideline.

Related ANZCA documents

The following Professional Documents should be interpreted in light of this document:

PS42(A) Position statement on staffing of accredited departments of anaesthesia

PS53(A) Position statement on the handover responsibilities of the anaesthetist

PS57(A) Position statement on duties of specialist anaesthetists

References

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15. Australian Medical Association Ltd. National code of practice - hours of work, shiftwork and rostering for hospital doctors. Kingston Australia: Australian Medical Association Ltd; 2016 Aug. Available from: https://ama.com.au/sites/default/files/documents/FINAL_NCP_Hours_of_work_2016.pdf Accessed 1 May 2024.

16. Work Health and Safety Act 2011 (Cth) s 19.

17. Health and Safety at Work Act 2015 (NZ) s 36.

18. Sussman D, Paul JE. The impact of transitioning from a 24-hour to a 16-hour call model amongst a cohort of Canadian anesthesia residents at McMaster University - a survey study. Adv Med Educ Pract. 2015;6:501–506.

Further reading

Fatigue Risk Management Task Force. Fatigue risk management toolkit for residents, leaders, and policy makers in Canadian postgraduate medical education. Resident Doctors of Canada. Ottawa (ON): 2018. Available from: residentdoctors.ca/wp-content/uploads/2018/11/Fatigue-Risk-Management-ToolkitEN.pdf Accessed 1 May 2024.

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