

Fatigue

Introduction

The management of fatigue is a growing issue within health care. This is particularly true in the perioperative environment. Increased workloads and demands to respond and attend to patient needs within the context of unplanned or emergency procedures are on the rise. Due to the time-critical nature of surgical events, urgent case presentations, and the need to complete scheduled operative cases, the perioperative environment sometimes relies heavily on mandatory overtime (often in the form of staff being on call or called back). Managing fatigue levels of staff is therefore becoming a critical issue because of its impacts on staff wellbeing and patient safety.

Fatigue, in broad terms, is a state of mental and physical exhaustion.¹ It can have impact on a worker's ability or willingness to safely and effectively perform a physical or mental task.² Landmark research has identified that fatigue can affect a worker's performance to a level equivalent to that seen with alcohol intoxication.³ Recent research on nursing workloads demonstrates that increased levels of fatigue increase the error rate by two to three times when nurses work 12.5 hours or longer.⁴

The literature also points to several factors which have been shown to increase fatigue amongst perioperative nursing staff. These include, but are not limited to, physical, emotional and cognitive demands,⁵ prolonged standing,⁶ limited breaks,⁵ work rostering,⁵ call backs,⁷ lead wearing⁶ and manual handling.⁵

Organisational and economic factors have created a culture where staff undertake additional duties without adequate breaks and/or recuperation away from the work environment.⁵ Fatigue has implications for health professionals' wellbeing, including physical ailments, poor sleep, and emotional and mental exhaustion.⁸ In addition, research points to health professionals managing their fatigue and sleep disturbances with prescription medication and alcohol.⁹

Health service organisations and individual health professionals have a combined obligation and ethical responsibility to ensure that staff arrive to work well rested and undertake their work competently and safely.

National and jurisdictional statutory requirements must be followed and take precedence over all recommendations contained within this guideline.

This guideline should be used in conjunction with other relevant ACORN standards, and national and jurisdictional statutory requirements, standards and guidelines. In particular, the current version of Safe Work Australia's *Guide for managing the risk of fatigue at work*.¹

Purpose

The purpose of this guideline is to provide direction for managing fatigue in order to provide safe, high quality perioperative care to surgical patients.

This guideline has been developed to provide a framework to prevent, identify and manage fatigue within the perioperative setting in order to support a safe work environment.

Evidence review

The evidence underpinning this guideline has been graded using a method that pre-dates the model ACORN now uses which is based on the Association of periOperative Registered Nurses (AORN) evidence rating model.

Principle

In order to ensure that fatigue management practices are employed, it is important that perioperative nurses have knowledge regarding best practice for preventing and managing fatigue in the workplace. This specifically relates to rostering practices (including overtime and on-call shifts), scope of practice, the safety issues involved and the potential for adverse events.

The guideline statements are suggested strategies for the organisation, nurse leaders and the individual nurse. Specific processes related to the prevention and management of fatigue in the perioperative environment are outlined.

Guideline statement 1

Health service organisations have a duty to promote a culture of safety by having written policies, procedures and guidelines relating to fatigue management for the delivery of safe and effective nursing care.¹⁰⁻¹³

Rationale

Health service organisations are well placed to promote a change in cultural attitudes to fatigue by helping perioperative nurses to acknowledge that fatigue is an unacceptable risk to patient and worker safety rather than a sign of a worker's dedication or commitment to the job.^{5,10,12,14}

The *Work Health and Safety Act 2011* for commonwealth jurisdictions, and state and territory workplace health and safety laws, maintain the following important safety obligations:

- the health and safety of people must underpin all operational decisions
- appropriate consultation, training and safe systems of work must be implemented
- workplaces must be free from harassment and bullying
- agencies and organisations remain subject to enforcement action for non-compliance.

Criteria

The operational procedure of the perioperative service shall include, but not be limited to:

- 1.1 ensuring that the rostering and on-call arrangements are adequate to accommodate the type of service, and associated work patterns, provided by the health service organisation¹⁴⁻¹⁶
- 1.2 establishing unit budgets to ensure there is adequate full-time equivalent (FTE) staff to provide safe staffing levels which allow for adequate rest periods^{5,10,12,17}
- 1.3 establishing rostering guidelines which limit shifts to 12 hours, including overtime; promote adequate recuperation periods between shifts; and limit the number of consecutive shifts and on-call shifts per roster period^{5,10,15,16,18,19}
- 1.4 documenting and reviewing the amount and frequency of unscheduled overtime and/or call back duties and the implications of extended work practices in relation to adverse patient events and employee workplace injuries^{5,15,18}
- 1.5 appropriate staffing and skill levels that enable staff to take appropriate meal and tea breaks as provided by the health service organisation local enterprise agreement^{5,10,15,18}
- 1.6 providing education for perioperative nursing staff about the signs and symptoms of personal fatigue, recognising fatigue in others and the tools to manage fatigue when recognised. This should include an understanding of the science of sleep and the risks associated with fatigue^{5,10,14-16,18}
- 1.7 providing sleep facilities to enable individuals to minimise their circadian disruptions during evening and night shift work^{5,12,15,16,18,20}
- 1.8 providing a dedicated staff lounge in order for staff to take breaks if they are fatigued during a shift⁵
- 1.9 making alternative transport options available for staff who feel unsafe to drive^{1,9}
- 1.10 providing clear guidelines for hospital coordinators about staffing for emergency cases and their responsibility to the perioperative staff who have been called back.^{5,10,14-16}

Guideline statement 2

To enable clinicians to function safely and efficiently within their work roles, the manager at the unit level has a duty to recognise the potential of fatigue when considering staffing allocations, rostering and workload utilisation.

Rationale

Clinicians experience fatigue as a result of being sleep deprived and/or overworked. Contributing factors include rostering, extended shifts, on-call and call back shifts, staffing levels, emotional trauma and exhaustion, work intensification, skill mix and participation in long surgical procedures.⁵⁻⁷

Nurse leaders at a unit level are responsible for the effective management of the perioperative nursing team and their work environment. They are responsible for ensuring that clinicians perform competently and safely, and are free of the effects of fatigue thereby providing a safe work culture which encompasses staff and patient wellbeing.

Criteria

The manager at a unit level has the responsibility to:

- 2.1 implement fatigue-prevention initiatives to ensure adherence to health service organisation policies and practices. The following should be specifically considered:
 - 2.1.1 the length of a shift, sequential and forward rotation of shifts and extended shift allocations^{7,14,21-23}
 - 2.1.2 periods of non-work following a sequence of shifts, e.g. night duty^{23,24}
 - 2.1.3 ensuring breaks between each work shift are sufficient to allow seven to eight hours of sleep time^{17,23}
 - 2.1.4 ensuring that clinicians do not work shifts longer than 12 hours inclusive of overtime^{7,23,25}
 - 2.1.5 ensuring adequate breaks during a shift, e.g. for hydration or mini breaks^{5,26}
 - 2.1.6 ensuring timely emotional support such as situational debriefing²⁷
 - 2.1.7 providing adequate rest measures for clinicians involved in long surgical procedures.^{6,28}
- 2.2 implement fatigue-prevention initiatives to ensure appropriate health service organisation policies and practices are adhered to in relation to on-call and call back practices, bearing in mind that:
 - 2.2.1 clinicians have an adequate break of sufficient time²⁹
 - 2.2.2 there is equivalent downtime between the last call back event and being restored to subsequent rostered duties³⁰
- 2.3 implement fatigue-prevention initiatives to ensure appropriate health service organisation policies and practices are adhered to in relation to staffing levels, skill mix, work allocation and role intensification, bearing in mind that:
 - 2.3.1 rosters reflect appropriate staffing levels to cover operating lists and periods of intense clinical workloads³¹
 - 2.3.2 scope of practice, skill mix and competence are addressed when coordinating safe staff levels on a particular shift or an on-call period¹⁹
 - 2.3.3 adequate staff is allocated to operating rooms each day, with consideration for estimated complexity and perceived surgical case load³²
- 2.4 implement fatigue-prevention initiatives to ensure staff education does not take place during periods of fatigue and that education shall encompass effective learning and performance strategies. These should include:
 - 2.4.1 designing unit orientation programs that highlight fatigue issues and strategies for prevention of fatigue for new perioperative staff members^{6,19}

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- 2.4.2 making professional development activities available at times to allow optimal participation by staff when they are not at risk of fatigue, particularly where learning activity is related to new procedures to be performed or the introduction of new equipment or health management systems.^{19,31}
- 2.5 implement fatigue-prevention initiatives to ensure that the health service organisation creates a culture of reporting fatigue, and reporting of incidents related to fatigue. In particular:
 - 2.5.1 providing an opportunity for staff to state that they are fatigued without fear of reprisal^{5,33,34}
 - 2.5.2 having processes in place to support the reporting of fatigue-related incidents, near misses, errors and behaviours; processes to determine the correlation between overtime, on-call and call back shifts; and the fiscal implications of overtime and adverse events.^{28,35-37}

Guideline statement 3

The perioperative nurse has a duty to be aware of individual safety risks in relation to fatigue and the risk these pose to the patient.^{10-13,15,18}

Rationale

Perioperative nurses in all roles and practice settings have a professional and personal responsibility to mitigate and manage their own fatigue and provide safe patient care.

Criteria

The perioperative nurse has the responsibility to:

- 3.1 arrive at work in a fit state to conduct duties safely; that is, not be affected by illness, drugs, sleep deprivation, stress, alcohol, fatigue or emotion which may impair rational cognitive decision making^{8,38}
- 3.2 communicate when they are not fit to conduct duties safely and negotiate relief strategies^{1,34,39,40}
- 3.3 recognise signs and symptoms of personal fatigue and inability to perform^{1,14,38-41}
- 3.4 recognise signs and symptoms of fatigue in fellow co-workers and action a plan to implement support and assistance^{27,38,42}
- 3.5 work collaboratively within the health service organisation's rostering guidelines when making roster requests and shift changes^{2,7,10,15,22,43}
- 3.6 encourage reporting and open discussion concerning fatigue and fatigue issues amongst colleagues^{1,2,7,14,40,43}
- 3.7 foster, support and encourage the changes required to move towards a culture of improved fatigue risk management^{14,15,22,36,39,40,43}
- 3.8 participate in the development of on-call rosters in consultation with the staff members involved^{7,22}
- 3.9 complete orientation training related to fatigue management offered by the health service organisation.^{1,15,38,44}

Glossary

Competence: the possession of required skills, knowledge, education and capacity. (NMBA, 2014)

Fatigue: a decreased capacity to perform mental or physical work, or the subjective state in which one can no longer perform a task. Fatigue manifests in physiological performance decrements and cognitive impairment. Fatigue primarily arises as a result of inadequate restorative sleep, but is also influenced by time of day and how long an individual has been awake.

Registered nurse: a person who has completed the prescribed education preparation, demonstrates competence to practise and is registered under the Health Practitioner Regulation National Law as a registered nurse in Australia. (NMBA, 2017)

Approval statement

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Acknowledgements

Review Lead

[Sue Ireland](#), MHSc(Nurs), BNurs(Hons), GDipNurs(Periop), GCertHE, GCertHlthSci(Ed), RN
Lecturer in Nursing, Deakin University, School of Nursing and Midwifery, Faculty of Health

Reviewers

[Scott Mitchell](#), MClSciEBP, GDipCritCareNurs, BN, RN
Clinical Services Coordinator for Anaesthetics and Recovery, Modbury Public Hospital

[Tracey Nicholls](#), MN NursPrac, BN, RN
ENT Nurse Practitioner Head & Neck Cancer Coordinator, Southern Adelaide Local Health Network

[Rachel Short](#), MNSc, BN, GDipNursSci(Anaest&Rec), RN
Registered nurse, Ashford Hospital (ACHA)

ACORN Board sponsors

[Joy Jensen](#), MEd (Mgt&Lead), PGDipFurtherAdultEd,
BN, RN, FACORN
Nurse Unit Manager Operating Services, Redcliffe Hospital

[Zaneta Smith](#), PhD, MClSciPrac, PGDipClinPrac(PeriopNurs), BN,

2020 Reviewers

[Elizabeth McKenna](#), MN (Periop), RN
Nurse Unit Manager, Mulgrave Private Hospital

[Suellen Moore](#), MS, MHLthLaw, BANurs, RN, FACN Perioperative Nurse Educator, St
George Public Hospital

References

1. Safe Work Australia. Guide for managing the risk of fatigue at work [Internet]. Canberra: Safe Work Australia; 2013 [cited 2020 March 4]. Available from: www.safeworkaustralia.gov.au/search/site/Guide%20for%20managing%20the%20risk%20of%20fatigue%20at%20work. [O]
2. Warren A, Tart RC. Fatigue and charting errors: The benefit of a reduced call schedule. *AORN J* 2008;88(1):88–95. [D]
3. Dawson D, Reid K. Fatigue, alcohol and performance impairment. *Nature* 1997; 388(6639):235–237. [D]
4. Rogers AE. The working hours of hospital staff nurses and patient safety. *Health Aff (Milwood)* 2004; 23(4):202–212. DOI: 10.1377/hlthaff.23.4.202. [D]
5. Registered Nurses' Association of Ontario (RNAO). Preventing and mitigating nurse fatigue in health care [Internet]. Toronto: RNAO; 2011 [cited 2020 March 4]. Available from: nao.ca/bpg/guidelines/preventing-and-mitigating-nurse-fatigue-health-care. [O]
6. Hughes NL, Nelson A, Matz MW, Lloyd J. AORN ergonomic tool 4: Solutions for prolonged standing in perioperative settings. *AORN J* 2011;93(6):767–774. [D]
7. Kenyon TAG, Gluesing RE, White KY, Dunkel WL, Burlingame BL. On call: Alert or unsafe? A report of the AORN on-call electronic task force. *AORN J* 2007;86(4):630–639. [D]
8. Drake DA, Luna M, Georges JM, Steege LM. Hospital nurse force theory: A perspective of nurse fatigue and patient harm. *Adv Nurs Sci* 2012;35(4):305–314. [D]
9. Dorrian J, Lamond N, van den Heuvel C, Pincombe J, Rogers AE, Dawson D. A pilot study of the safety implications of Australian nurses' sleep and work hours. *Chronobiol Int* 2006;23(6):1149–1163. [C]

10. Association of periOperative Registered Nurses. AORN guidance statement: Safe on-call practices in perioperative practice settings. In: Perioperative standards and recommended practices. Denver: AORN; 2013, 549–552. [O]
11. Paterson-Brown S. Improving patient safety in the operating room – everyone’s responsibility. *Clin Risk* 2010;16(1):6–9. [D]
12. Gaba DM, Howard SK. Patient safety: Fatigue among clinicians and the safety of patients. *N Engl J Med* 2002;347(16):1249–1255. [D]
13. Hazzard B, Johnson K, Dordunoo D, Klein T, Russell B, Walkowiak P. Work- and nonwork-related factors associated with PACU nurses’ fatigue. *J Perianesth Nurs* 2013;28(4):201–209. [D]
14. Reed K. Promoting healthy work hours for nurses. *Nursing* 2013;43(1):64–65. [D]
15. Australian Nursing Federation (ANF). Fatigue prevention policy [Internet]. Canberra: ANF; 2013 [cited 2020 March 4]. Available from: anmf.org.au/documents/policies/P_Fatigue_prevention.pdf. [O]
16. The Joint Commission. Health care worker fatigue and patient safety. The Joint Commission Sentinel Event Alert December 2011; Issue 48 [cited 2014 December 09]. Formerly available from: www.jointcommission.org/assets/1/18/SEA_48.pdf. [O]
17. WorkCover Queensland. Managing fatigue [Internet]. Brisbane: Workcover Queensland; [updated 11 Nov 2014; cited 2020 March 4]. Available from: www.worksafe.qld.gov.au/injury-prevention-safety/workplace-hazards/fatigue/managing-fatigue. [L]
18. Canadian Nurses Association and Registered Nurses’ Association of Ontario. Nurse fatigue and patient safety: Research report 2010 [Internet]. Ottawa: Canadian Nurses Association; 2010 [cited 2020 March 4]. Available from: www.cna-aiic.ca/en/on-the-issues/better-care/patient-safety/nurse-fatigue-and-patient-safety. [D]
19. WorkSafe Victoria. Fatigue prevention in the workplace [Internet] Melbourne: WorkSafe Victoria 2019 [cited 2020 March 4]. Available from: www.worksafe.vic.gov.au/resources/fatigue-prevention-workplace-your-health-and-safety-guide. [L]
20. Canadian Nurses Association. Report on fatigue recommends actions at many levels. *Can Nurse* 2010;106(5):12–14. [O]
21. American Society of PeriAnesthesia Nurses (ASPAN). Position statement 7. A position statement on ‘On call/work schedule’ (last update 2011). In: 2012–2014 Perianesthesia nursing standards, practice, recommendations and interpretive statements. Cherry Hill, New Jersey: ASPAN; 2014. [O]
22. Yuan SC, Chou MC, Chen CJ, Lin YJ, Chen MC, Liu HH et al. Influences of shift work on fatigue among nurses. *J Nurs Manag* 2011;19(3):339–345. [D]
23. Bahr S, Buth C, Martin R, Peters N, Swanson K, Warhanek J et al. White paper: Nurse scheduling and fatigue in the acute 24 hour setting. Milwaukee: Wisconsin Organization of Nurse Executives; 2008 [cited 2020 March 4]. Available from: www.ena.org/docs/default-source/resource-library/practice-resources/white-papers/nurse-fatigue. [D]
24. Olson L, Ambrogetti A. Working harder – Working dangerously. Fatigue and performance in hospitals. *Med J Aust* 1998;168(12):614–616. [D]
25. Chen J, Davis KG, Daraiseh NM, Pan W, Davis LS. Fatigue and recovery in 12-hour dayshift hospital nurses. *J Nurs Manag* 2014; 22(5):593–603. DOI: 10.1111/jonm.12062. [D]
26. Caruso CC, Hitchcock EM, Dick RB, Russo JM, Schmit JM. Overtime and extended work shifts: Recent findings on illnesses, injuries and health behaviours [Internet]. Ohio: US Department of Health and Human Services/CDC/NIOSH; 2004 [cited 2020 March 4]. Available from: www.cdc.gov/niosh/docs/2004-143/pdfs/2004-143.pdf. [D]
27. Winwood PC, Lushington K. Disentangling the effects of psychological and physical work demands on sleep, recovery and maladaptive chronic stress outcomes within a large sample of Australian nurses. *J Adv Nurs* 2006;56(6):679–689. [D]
28. Steege LM, Drake DA, Olivas M, Mazza G. Evaluation of physically and mentally fatiguing tasks and sources of fatigue as reported by registered nurses. *J Nurs Manag* 2015;23(2):179–189. DOI: 10.1111/jonm.12112. [D]
29. Australian and New Zealand College of Anaesthetists (ANZCA). Guideline on fatigue risk management in anaesthesia practice [Internet]. Melbourne: ANZCA; 2019 [cited 2020 March 4]. Available from: www.anzca.edu.au/documents/ps43-2007-statement-on-fatigue-and-the-anaesthetis.pdf. [G]

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30. Rosekind MR. Managing work schedules: An alertness and safety perspective [Internet]. San Jose: Northern California Business Aviation Association; 2005 [cited 2014 Dec 08]. Available from: norcalbaa.org/uploads/NCBAA_ARTICLES_20110825_Alertness_Solutions_Managing_Work_Schedules.pdf. [D]
31. Work Health and Safety Act 2011, No. 137, 2011. [L]
32. Skinner N, Hutchinson C, Pocock B. Australian work and life index – the big squeeze: Work home and care in 2012 [Internet]. Adelaide: University of South Australia; 2012 [cited 2020 March 4]. Available from: <https://pdfs.semanticscholar.org/d7c6/2ddbdc5fd38b37effdaa919d81f78874827.pdf>. [D]
33. Beyea SC. Too tired to work safely? AORN J 2004;80(3):559–562. [D]
34. Goldberg JL, Marshalkowski PL, Nissen RB. The importance of mandatory rest periods in OR environments. AORN J 2008;88(5):790–797. [D]
35. Monahan JJ. Culture of safety: Safe work hours in the OR. AORN J 2012;95(1):149–154. [D]
36. Garrett C. The effect of nurse staffing patterns on medical errors and nurse burnout. AORN J 2008;87(6):1191–1192, 1194, 1196–1204. [D]
37. Cohoon B. Causes of near misses: Perceptions of perioperative nurses. AORN J 2011;93(5):551–565. [D]
38. Scott LD, Hofmeister N, Rogness N, Rogers AE. An interventional approach for patient and nurse safety: A fatigue countermeasures feasibility study. Nurs Res 2010;59(4):250–258. [D]
39. Queensland Health. Fatigue risk management system: Resource pack. Brisbane: Queensland Government; 2009 [cited 2014 Dec 08]. Formerly available from: enhancingresponsibility.com/wp-content/uploads/2014/01/Queensland-Health-Fatigue-Risk-Management-System-resource-pack-2009.pdf. [H]
40. World Health Organization (WHO). Human factors in patient safety: Review of topics and tools [Internet]. Geneva: WHO; 2009 [cited 2020 March 4]. Available from www.who.int/patientsafety/research/methods_measures/human_factors/human_factors_review.pdf. [A]
41. Brewer K. How a ‘just culture’ can improve safety in health care. Am Nurse Today 2011;6. [D]
42. Bae S. Nurse overtime, working conditions, and the presence of mandatory nurse overtime regulations. Workplace Health Saf 2012; 60(5):205–214. [D]
43. Graves K, Simmons D. Reexamining fatigue: Implications for nursing practice. Crit Care Nurs Q 2009;32(2):112–115. [D]
44. Neft M, Greenier E. An update from the AANA Practice Committee: Application of the evidence-based process. AANA J 2013;81(1):9–12. [D]

Bibliography

New South Wales Department of Health. Fatigue – preventing and managing work-related fatigue: Guidelines for the NSW Public Health System [Internet]. NSW Health: Sydney; 2007 [accessed 2020 March 4]. Available from: www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2007_023.pdf.

Queensland Government. Fatigue risk management HR Policy I1 [Internet]. Queensland Health: Brisbane; 2014 [accessed 2020 March 4]. Available from www.health.qld.gov.au/__data/assets/pdf_file/0029/396056/qh-pol-171.pdf.

Royal College of Nursing (RCN). Patient safety and human factors [Internet]. RCN: London; 2020 [accessed 2020 March 4]. Available from www.rcn.org.uk/clinical-topics/patient-safety-and-human-factors.



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