

POSITION STATEMENT

Fatigue, Sleep Deprivation, and Safety

If not addressed, fatigue, sleep deprivation, and long periods of on-duty time can present potential safety risks for midwives, midwifery students, and the patients and families for whom they provide care. The American College of Nurse-Midwives (ACNM) and its members are committed to providing safe, ethical, and high-quality care for pregnant and postpartum people and their infants. To achieve this commitment, it is the position of the American College of Nurse-Midwives (ACNM) that

- Midwives have a professional responsibility to be aware of the effects of sleep deprivation on clinical and personal safety and take steps to limit those effects as suggested below.
- Midwives and midwifery services have a responsibility to create and use strategies to address and minimize sleep deprivation through which personal, physical, and mental/cognitive limitations are acknowledged. These strategies should consider acute issues (e.g. prolonged wakefulness during labor support) and chronic issues (e.g. call schedules and staffing patterns) to minimize the risks of sleep deprivation.
- Midwives should plan a rest period after 16 hours of continued wakefulness and be aware that the urge to sleep is strongest between 3am and 5am.¹
- Midwives are encouraged to schedule at least seven to eight hours of uninterrupted sleep on a regular basis.²
- Midwives who are sleep deprived or feel drowsy are advised to take naps before operating motor vehicles.
- Student midwives should be encouraged to plan a rest period after 16 hours of continued wakefulness and to schedule seven or more hours of uninterrupted sleep on a regular basis.

Background

Adequate, restful sleep is critical to normal human functioning.³ The American Academy of Sleep recommends that adults should obtain quality sleep of seven or more hours per night on a regular basis.² Despite this, in a 2013 survey by the National Sleep Foundation, 32% of U.S. adults reported sleeping less than seven hours per night, and 21% reported regularly getting less than six hours of sleep.² Approximately one-third of health care workers reported less than or equal to six hours of sleep in 24 hours.⁴ In another study, Australian midwives frequently recorded inadequate sleep hours with a total sleep time of six to seven hours in a 24-hour period.⁵ This lack of sleep was associated with moderate to high levels of physical and mental exhaustion. In a study from the United Kingdom, midwives who worked long hours, particularly on-call hours in community-based midwifery services, had higher rates of burnout on a Maslach Inventory Scale.⁶ In a 2016 national survey of midwives, 71% of survey respondents who were not in full scope midwifery practice (*n*=103) reported that fatigue

and/or sleep loss was a reason they left full- scope midwifery practice, retired, or changed schedules.⁷ Health care workers who are subject to rotating shifts and on-call duties are at risk for chronic and acute sleep deprivation. Risks associated with fatigue are also compounded by chronic exposure to sleep loss.⁸ Chronic sleep deprivation is associated with significant health risks, including obesity, diabetes, cardiovascular disease, stroke, depression, hypertension, and increased mortality.^{3,9-11} Inadequate sleep can also lead to burnout.⁷

Acute sleep loss contributes to cognitive impairment, decreased reaction times, impaired motor skills, attentional failures, workplace errors, and motor vehicle accidents.^{3,10,12-14} Researchers found the effect of 17 hours of wakefulness was equivalent to or worse than a blood alcohol level of 0.05% on cognitive psychomotor test responses. After 24 hours of wakefulness, performance was equivalent to a blood alcohol level of 0.10%.¹⁵

In a national survey of midwives, 67% of respondents who took call shifts reported being on call for an average of 13 to 48 hours; another 12% reported being on call for more than 48 hours at a time. Approximately one-fourth reported that they made clinical errors, and nearly 40% reported near miss clinical errors that they attributed to sleep deprivation or sleepiness.⁷ In a review of the literature on sleep deprivation and safety in health care, 24-hour shifts versus 16-hour shifts increased the rate of medical errors by 36%, including a 5-fold increase in diagnostic errors. Needle-stick injuries increased by 60% after 20 hours of continuous work.¹⁶

Other medical professionals with irregular work hours were 2.3 times more likely to be involved in motor vehicle collisions and were 5.9 times more likely to report near-miss motor vehicle collisions after extended shifts of at least 24 hours.¹⁷⁻¹⁹ Nearly 30% of midwife survey respondents admitted to nodding off or falling asleep while driving home from call shifts; approximately 65% reported they experienced drowsiness and inattentiveness while driving home after call shifts; and nearly half reported they did not nap before driving home after long, particularly exhausting shifts, even when break rooms were available. More than 40% of midwives surveyed knew a colleague who had been in a motor vehicle collision due to sleepiness.⁷

Midwives and students should employ tools and strategies to reduce the adverse consequences of fatigue and sleepiness. Defined as countermeasures, these tools and strategies include increasing time for recovery after multiple shifts, napping, caffeine use, sleep hygiene and treatment of sleep disorders, bright or blue light exposure, wake- and sleep-promoting medications, and regular exercise and activity breaks.^{8,20,21} Other strategies cited by midwives include schedule modification such as limiting shift work to 12- or 24-hour shifts as well as structural changes such as changing the workflow process, environment, or institutional policies.⁷ Note that these countermeasures can have both positive and negative short- and long-term effects; for example, while caffeine and naps may decrease sleepiness and improve alertness, these measures may also lead to a reduced ability for recuperative sleep.

In recognition that practicing student midwives are also learners, midwifery students should be

well-rested before scheduled call times, have a period of four hours of uninterrupted rest after 16 hours of active on-duty time, and take naps before working more than 16 hours. Shifts that are greater than 12 hours of length can inhibit a student's ability to learn and can place patients at risk due to the increased risk of cognitive and physical function errors.²² Midwifery education programs are encouraged to develop policies that limit duty shifts of student to no more than 24 hours long.

ACNM recognizes that the midwife's ability to properly sleep and work is contingent on many factors, including the type and location of the practice, institutional policies, and the midwife's personal sleep needs. Given the compelling evidence that supports the need for adequate sleep and rest periods, ACNM recommends that midwives, midwifery education programs, and health care institutions evaluate policies on rest and sleep safety to ensure that patients and families receive optimal, safe care. Additionally, given the role of sleep and fatigue in decision making in the workplace, midwives must be aware that personal practices influence the long-term health and well-being of themselves and the families in their care.

REFERENCES

1. ACOG Committee Opinion No. 730: Fatigue and Patient Safety. *Obstet Gynecol.* 2018;131(2):e78-e81. doi:10.1097/AOG.0000000000002502
2. Hirshkowitz M, Whiton K, Albert SM, et al. National Sleep Foundation's sleep time duration recommendations: methodology and results summary. *Sleep Health.* 2015;1(1):40-43. doi:10.1016/j.sleh.2014.12.010
3. Banks S, Dinges DF. Behavioral and physiological consequences of sleep restriction. *J Clin Sleep Med JCSM Off Publ Am Acad Sleep Med.* 2007;3(5):519-528.
4. Luckhaupt SE, Tak S, Calvert GM. The prevalence of short sleep duration by industry and occupation in the National Health Interview Survey. *Sleep.* 2010;33(2):149-159. doi:10.1093/sleep/33.2.149
5. Tremaine R, Dorrian J, Paterson J, et al. Actigraph estimates of the sleep of Australian midwives: the impact of shift work. *Biol Res Nurs.* 2013;15(2):191-199. doi:10.1177/1099800411422249
6. Mollart L, Skinner VM, Newing C, Foureur M. Factors that may influence midwives work-related stress and burnout. *Women Birth.* 2013;26(1):26-32. doi:10.1016/j.wombi.2011.08.002
7. Arbour MW, Gordon IK, Saftner M, Tanner T. The experience of sleep deprivation for midwives practicing in the United States. *Midwifery.* 2020;89:102782. doi:10.1016/j.midw.2020.102782
8. Gurubhagavatula I, Barger LK, Barnes CM, et al. Guiding principles for determining work shift duration and addressing the effects of work shift duration on performance, safety, and health: guidance from the American Academy of Sleep Medicine and the Sleep Research Society. *Sleep.* 2021;44(11):zsab161. doi:10.1093/sleep/zsab161

9. CDC. Sleep and Sleep Disorders. Centers for Disease Control and Prevention. Published March 23, 2023. Accessed October 31, 2023.
<https://www.cdc.gov/sleep/index.html>
10. Querstret D, O'Brien K, Skene DJ, Maben J. Improving fatigue risk management in healthcare: A scoping review of sleep-related/ fatigue-management interventions for nurses and midwives (reprint). *Int J Nurs Stud*. 2020;112:103745. doi:10.1016/j.ijnurstu.2020.103745
11. Gu F, Han J, Laden F, et al. Total and cause-specific mortality of U.S. nurses working rotating night shifts. *Am J Prev Med*. 2015;48(3):241-252. doi:10.1016/j.amepre.2014.10.018
12. Bioulac S, Micoulaud-Franchi JA, Arnaud M, et al. Risk of Motor Vehicle Accidents Related to Sleepiness at the Wheel: A Systematic Review and Meta-Analysis. *Sleep*. 2017;40(10):zsx134. doi:10.1093/sleep/zsx134
13. Lee ML, Howard ME, Horrey WJ, et al. High risk of near-crash driving events following night-shift work. *Proc Natl Acad Sci U S A*. 2016;113(1):176-181. doi:10.1073/pnas.1510383112
14. Ftouni S, Sletten TL, Howard M, et al. Objective and subjective measures of sleepiness, and their associations with on-road driving events in shift workers. *J Sleep Res*. 2013;22(1):58-69. doi:10.1111/j.1365-2869.2012.01038.x
15. Williamson AM, Feyer AM. Moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication. *Occup Environ Med*. 2000;57(10):649-655. doi:10.1136/oem.57.10.649
16. Lockley SW, Cronin JW, Evans EE, et al. Effect of reducing interns' weekly work hours on sleep and attentional failures. *N Engl J Med*. 2004;351(18):1829-1837. doi:10.1056/NEJMoa041404
17. Mak NT, Li J, Wiseman SM. Resident Physicians are at Increased Risk for Dangerous Driving after Extended-duration Work Shifts: A Systematic Review. *Cureus*. 2019;11(6):e4843. doi:10.7759/cureus.4843
18. Talusan PG, Long T, Halim A, Guliani L, Carroll N, Reach J. Effects of Fatigue on Driving Safety: A Comparison of Brake Reaction Times in Night Float and Postcall Physicians in Training. *J Grad Med Educ*. 2014;6(4):653-657. doi:10.4300/JGME-D-14-00006.1
19. National Highway Traffic Safety Administration. Asleep At The Wheel: A National Compendium of Efforts to Eliminate Drowsy Driving. Published 2017, Accessed February 2, 2024.
https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/12723-drowsy_driving_asleep_at_the_wheel_031917_v4b_tag.pdf
20. Centofanti S, Banks S, Colella A, et al. Coping with shift work-related circadian disruption: A mixed-methods case study on napping and caffeine use in Australian nurses and midwives. *Chronobiol Int*. 2018;35(6):853-864. doi:10.1080/07420528.2018.1466798
21. Redinger J, Kabil E, Forkin KT, Kleiman AM, Dunn LK. Resting and Recharging: A Narrative Review of Strategies to Improve Sleep During

Residency Training. *J Grad Med Educ.* 2022;14(4):420-430. doi:10.4300/JGME-D-21-01035.1

22. Lawrence R, Kantrowitz-Gordon I, Landis A. Student midwives' duty hours: risks, standards, and recommendations. *J Midwifery Womens Health.* 2014;59(2):127-140. doi:10.1111/jmwh.12053

Note. Midwifery as used throughout this document refers to the education and practice of certified nurse-midwives (CNMs) and certified midwives (CMs) who have been certified by the American College of Nurse-Midwives (ACNM) or the American Midwifery Certification Board, Inc. (AMCB).

Source: ACNM Sleep and Safety Taskforce & Clinical Practice & Documents Section of the Division of Standards and Practice

Approved by ACNM Board of Directors: 2017

Updated March 2024