

# The Nurse's Role in Promoting Non-pharmacological Sleep in a Children's Ward

## Background

- Sleep is important (especially in children) to boost immunity, assist recovery<sup>1,2</sup>, regulate vital signs<sup>3</sup>, emotions and perceptions of pain<sup>4,5</sup>; assist brain growth, development<sup>6,7</sup>, learning and memory<sup>8,9</sup>.
- Hospitalisation disrupts sleep in children<sup>4,5,10,11</sup>. Poor sleep in hospital may complicate and prolong hospital stay<sup>12</sup>.
- To maximise benefits, sleep must be prioritised in hospital as an opportunity to facilitate better sleep for children, which may extend after discharge. Therefore, maximising benefits to the child, and health care system<sup>12</sup>.

## Purpose

- Non-pharmacological sleep promotion is a cost-effective and safe method of improving health, at a public health level.
- Nurses are excellent at building partnerships<sup>13</sup> and are the most constant health care workers:<sup>14,15</sup> able to connect with families and promote sleep, especially in hospitalised children.<sup>13</sup>
- This evidence based practice guideline was developed through a rigorous research process. The guideline was modified from two international, adult, sleep promotion sources.<sup>16-19</sup> Modification ensured recommendations were relevant and implementable to children, in a low-middle income context.

## Flow chart for non-pharmacological sleep promotion in-hospital

This flow chart is to be used in conjunction with the full evidence-based practice guideline (available from the author) and appropriate staff education and training.

### 1) Safety and special consideration

#### Ensure patient safety

- ✓ Is it safe for the child to sleep now?
- ✓ Are vital signs up to date?
- ✓ Has a sleep history been taken?

NO

Prioritise ward standards, clinical judgement and patient needs<sup>18</sup>

### 2) Collaborate with mother/caregiver

#### Is the mother present at the bedside?

- ✓ Support the mother (or bedside carer) to settle the child and to protect individualised sleep for child
- ✓ Goal: In-hospital sleep that is closest to at home sleep

NO

### 3) Ward routine

#### Is it protected sleep time in the ward?

- ✓ Rest periods: 13h00 – 14h00 OR 22h00 – 05h00
- ✓ Ensure the child's comfort before sleep (Use Regul8 framework<sup>20</sup> to guide)
- ✓ Gatekeep access to the child
- ✓ Cluster care

### 4) Ward environment

#### Is the environment conducive to sleep?

- ✓ Remedy sleep disturbances
- ✓ Goal: Quiet, low light ward without technological or other sleep distractions

### 5) Involve Health care team

#### Is everyone informed of the guideline?

- ✓ Inform mother, staff and other persons (e.g. visitors) of guideline and importance of sleep
- ✓ Help children sleep better, be less stressed; develop, cope and recover better

### 6) Assess sleep

#### Evaluate sleep 12-hourly

- ✓ Evaluate sleep using BEADS sleep screening tool<sup>21</sup>
- ✓ Compare child's sleep with age appropriate sleep target:  
【 4-12 months: 12-16 hours 】 【 1-2 years: 11-14 hours 】  
【 3-5 years: 10-13 hours 】 【 6-12 years: 9-12 hours 】  
Values taken from Paruthi et al. (2016)<sup>22</sup> for healthy children, per 24 hours: Ill children may sleep more.

**Apply problem-solving, clinical judgement and revisit previous steps to reach sleep target.**

#### Regul8 framework<sup>20</sup>

- 1) Engaged mother to child interaction
- 2) No needless pain
- 3) Hydration e.g. well hydrated and not thirsty
- 4) Nutrition e.g. not hungry
- 5) Managing microbial load
- 6) Skin and mucosal integrity
- 7) Developmentally supportive care
- 8) A system of action

#### BEADS sleep screening tool<sup>21</sup>

- Use BEADS-prompts to identify sleep disturbing causes.
  - Ask additional questions based on own
  - Promptly address identified sleep disturbances
- B)** Bedtime problems: ease of settling
- E)** Excessive daytime sleepiness
- A)** Awakenings during sleep
- D)** Duration of sleep: calculate duration of sleep and compare to age-appropriate sleep-target
- S)** Safety and sleep disorders e.g. snoring and pharmacotherapy

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#### References:

- (1) DeKeyser Ganz, F. Sleep and immune function. Crit. Care Nurse. 2012;32(2): e19-e25. doi:10.4037/ccn2012689. (2) Gamaldo CE, Shaikh AK, McArthur JC. The sleep-immunity relationship. Neurol Clin. 2012;30(4):1313-43. doi:10.1016/j.nc.2012.08.007. (3) Dennis CM, Lee R, Woodard EK, Szalay JJ, Walker CA. Benefits of quiet time for neuro-intensive care patients. J Neurosci Nurs. 2012;42(4):217-24. doi:10.1097/JNN.0b013e318262620. (4) Bevan R, Grantham-Hill S, Bowen R, Clayton E, Grice H, Venditti HC et al. Sleep quality and noise: comparisons between hospital and home settings. Arch. Dis. Child. 2019;104(2):147-51. doi:10.1136/archdischild-2018-315168. (5) Stickland A, Clayton E, Sankey R, Hill CM. A qualitative study of sleep quality in children and their resident parents when in hospital. Arch. Dis. Child. 2016;101(6): 546-51. doi:10.1136/archdischild-2015-309458. (6) Beebe DW. Cognitive, behavioral, and functional consequences of inadequate sleep in children and adolescents. Pediatr. Clin. N. 2011;58(3):649-65. doi:10.1016/j.pcl.2011.03.002. (7) Grigg-Damberger MM. Ontogeny of Sleep and Its Functions in Infancy, Childhood, and Adolescence. In Nevsimialova S, Bruni O, editors. Sleep Disorders in Children. Switzerland: Springer; 2016 [cited 2020 Feb 08]. doi:10.1007/978-3-319-28640-2. (8) Goldstein AN, Walker MP. The role of sleep in emotional brain function. Annu Rev Clin Psychol. 2014;10:679-708. doi:10.1146/annurev-clinpsy-032813-153716. (9) Kreutzmann JC, Havekes R, Abel T, Meerlo P. Sleep deprivation and hippocampal vulnerability: changes in neuronal plasticity, neurogenesis and cognitive function. Neurosci J. 2015;309:173-90. doi: 10.1016/j.neuroscience.2015.04.053. (10) Setoyama A, Ikeda M, Kamibepu K. Objective assessment of sleep status and its correlates in hospitalized children with cancer: Exploratory study. Pediatr Int. 2016;58(9):842-9. doi:10.1111/ped.12927. (11) Kudchadkar SR, Aljohani OA, Punjabi NM. Sleep of critically ill children in the pediatric intensive care unit: A systematic review. Sleep Med. Rev. 2014;18(2):103-10. doi:10.1016/j.smrv.2013.02.002. (12) Morse AM, Bender E. Sleep in Hospitalized Patients. Clocks & Sleep. 2019;11(1):151-65. doi:10.3390/clocksleep1010014. (13) Keys EM, Benzie KM. A Proposed Nursing Theory: Infant Sleep and Development. NursSci Q. 2018;31(3): 279-86. doi:10.1177/08983184187745. (14) Institute of Medicine. The Future of Nursing: Leading Change, Advancing Health. 2011. doi:10.17226/12956. (15) Hilton BA. Quantity and quality of patients' sleep and sleep-disturbing factors in a respiratory intensive care unit. J. Adv. Nurs. 1976;1(6):453-68. doi: 10.1111/j.1365-2648.1976.tb00932.x. (16) Elliott R. Rest and Sleep for the Intensive Care Patient. 2012. Unpublished manuscript. (17) Elliott R & McKinley S. The development of a clinical practice guideline to improve sleep in intensive care patients: a solution focused approach. Intensive Crit Care Nurs. 2014;30(5): 246-56. doi:10.1016/j.iccn.2014.04.003. (18) Knaeuper MP. Naptime in the ICU: Checklist for Quiet time implementation. 2013. Unpublished manuscript. (19) Knaeuper MP, Redeker NS, Yaggi HK, Bennick M, Pisani MA. Creating Naptime: An Overnight, Nonpharmacologic Intensive Care Unit Sleep Promotion Protocol. J. Patient Exp. 2018;5(3):180-7. doi:10.1177/2374373517747242. (20) Coetzee M. The role of the children's nurse in optimising autonomic regulation: the Regul8 framework [Poster]. Cape town: University of Cape Town; 2019 [cited 2020 May 12]. <https://open.uct.ac.za/handle/11427/31206>. (21) Adopted from: Owens JA, Datzell V. Use of the 'BEARS' sleep screening tool in a pediatric residents' continuity clinic: a pilot study. Sleep Med. 2005;6(1), 63-9. doi:10.1016/j.sleep.2004.07.015. (22) Paruthi S, Brooks LJ, D'Ambrosio C, Hall WA, Kotagal S, Lloyd RM, et al. Recommended Amount of Sleep for Pediatric Populations: A Consensus Statement of the American Academy of Sleep Medicine. J Clin Sleep Med. 2016;12(6):785-6. doi:10.5664/jcsm.5866.



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