

Title: Frequency of Postoperative Vital Sign Monitoring: Review of Associated Interventions and Implications

Authors: Kaitlin Olson MSN RN & Lina Garcia-Pinzon BSN RN

On behalf of The Nursing Research Council for Innovation and Transformation, Hartford Hospital, Hartford CT

Purpose & Rationale: This project examined postoperative vital sign (VS) orders, frequency of postoperative VS, and associated interventions. The frequency of obtaining VS in a surgical unit was impacting time for patient care associates (PCAs).

Project Question: What percentage of postoperative patients in the first six hours of arrival from PACU had abnormal VS that led to an intervention?

Synthesis of Review of Literature: Research on standards for frequency of postoperative VS is lacking^{5,6}. The pattern for postoperative VS is hourly for four hours, then every four hours⁴. Frequency of VS is determined by unit culture rather than clinical judgment and evidence-based practice^{4,5}. Studies show that more frequent VS within the first 24 hours post PACU do not correlate to an increase in abnormal VS or complications^{2,3,5}. Instead, complications were identified by assessments⁴.

Methods/Procedure: A three-month retrospective record review was performed in 2015 for patients on a 42-bed surgical unit in a level one-trauma center in New England. VS, including manual blood pressures (BPs), were reviewed for the first six hours after arrival from PACU. The incidence of VS outside the range and interventions based on abnormal VS were recorded. Variations from the order for VS frequency and patterns for BP, respiratory rate (RR), and temperature were identified.

Results: Of the 129 records reviewed, 14 (11%) had VS that led to the following interventions: provider called (29%); more frequent VS (29%); respiratory treatment (29%); medication (21%); transfer to higher level of care (7%).

Fifty-eight percent of the patients had VS performed more frequently than ordered; 24% had VS done less frequently than ordered. For 69% of the systolic pressures and 53% of diastolic were divisible by 10 for all that were recorded. In 41% of the RRs, the value 18; in 48% of the RRs, the value 20.

Discussion/Application to Practice: Abnormal VS six hours post PACU infrequently led to intervention^{2,3}. Variability occurred in obtaining VS as ordered. Oxygen saturation was the most frequent abnormal VS that led to intervention, underscoring that assessing respiratory status during hourly rounding is imperative. Due to high percentage of VS patterns, yearly VS validation for PCAs is recommended for obtaining VS accuracy. VS can safely be taken less frequently freeing PCAs to perform other tasks to enhance patient experience^{2,3,5}.

Standards for VS frequency based on the patient's status are needed⁶. VS orders should be evidenced-based, involve critical thinking^{3,4,5}, and include 'per nursing judgment'^{3,4,5}. Clinical models would establish frequency of observation and VS based on patient condition and nursing experience⁴.

References

- ¹Johnson, K. D., Winkelman, C., Burant, C. J., Dolansky, M., & Totten, V. (2014). The Factors that affect the frequency of vital sign monitoring in the emergency department. *JEN: Journal Of Emergency Nursing*, 40(1), 27-35. Retrieved January 22, 2016 from doi:10.1016/j.jen.2012.07.023
- ²Pimentel, M. F., Clifton, D. A., Clifton, L., Watkinson, P. J., & Tarassenko, L. (2013). Modelling physiological deterioration in post-operative patient vital-sign data. *Medical & Biological Engineering & Computing*, 51(8), 869-877. Retrieved January 22, 2016 from doi:10.1007/s11517-013-1059-0
- ³Schumacher, S. (1995). Monitoring vital signs to identify postoperative complications. *MEDSURG Nursing*, 4(2), 142-145. Retrieved January 22, 2016 from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=107408426&site=ehost-live>
- ⁴Zeitz, K., Dip, G., & McCutcheon, H. (2006). Observations and vital signs: Ritual or vital for the monitoring of postoperative patients? *Applied Nursing Research*, 19, 204-211. Retrieved January 22, 2016 from <https://uconn.illiad.oclc.org/illiad/illiad.dll?Action=10&Form=75&Value=683622>
- ⁵Zeitz, K., & McCutcheon, H. (2005). Tradition, rituals and standards, in a realm of evidenced based nursing care. *Contemporary Nurse: A Journal For The Australian Nursing Profession*, 18(3), 300-308. Retrieved January 22, 2016 from doi:10.5172/conu.18.3.300
- ⁶Zeitz, K., & McCutcheon, H. (2002). Policies that drive the nursing practice of postoperative observations. *International Journal Of Nursing Studies*, 39(8), 831-839. Retrieved January 22, 2016 from doi:10.1016/S0020-7489(02)00024-X