



Surgical Patient Optimization

“...identify health care services for which there are substantial variation in practice patterns or high utilization trends in Washington state, without producing better care outcomes for patients, that are indicators of poor quality and potential waste in the health care system.”

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| PROBLEM STATEMENT: |
| Suboptimal preparation before surgery has negative consequences for patients. Preoperatively anemic individuals have higher costs generally due to increased length of stay ¹ and even mild preoperative anemia is associated with an increase in 30-day morbidity ² lower quality of recovery and higher adjusted risk of death and disability ³ Some studies suggest poor A1c control preoperatively increases morbidity and mortality ⁴ but perioperative glucose is a stronger predictor of 30-day mortality ⁵ Enhanced Recovery After Surgery protocols improve length of stay and reduce total cost of care, complications and readmissions. ⁶ There is high variation for A1c optimization during surgery, perioperative glycemic control protocols, and perioperative anemia control. Black patients are 3-4x more likely to experience anemia preoperatively; Black, Hispanic, AI/AN patients more likely to experience uncontrolled diabetes/serum glucose, leading to inequitable outcomes. |
| DOES THE TOPIC HAVE (CHECK ALL THAT APPLY): |
| <input checked="" type="checkbox"/> VARIATION IN CARE <input checked="" type="checkbox"/> SAFETY CONCERNS <input checked="" type="checkbox"/> HIGH COST AND POOR OUTCOMES <input checked="" type="checkbox"/> EQUITY CONCERNS |
| PROPOSED SCOPE: |
| Standardized protocols for enhancing recovery after surgery including multisector roles to facilitate guideline adherence. <u>Out of scope:</u> intra-operative best practices for specific procedures, transitions of care |
| EVIDENCE-BASED IMPACT STRATEGY: |
| <p><i>Outpatient Delivery Systems:</i> Preoperative anemia evaluation/ treatment/ management and glycemic control ahead of and during elective or planned procedures, coordination with surgical team on appropriateness for surgery, scheduling procedures in least restrictive setting</p> <p><i>Inpatient/Surgery Centers:</i> Integrate anemia and glycemic status into protocols for surgical optimization</p> <p><i>Plans/Purchasers:</i> Bundled reimbursement for enhanced recovery after surgery protocols, minimize cost barriers to services that support preoperative optimization (anemia evaluation and treatment, nutrition therapy, physical therapy)</p> |
| AVAILABLE DATA FOR MONITORING AND EVALUATION: |
| The Surgical Care Outcomes Assessment Program collects data on 11 enhanced recovery after-surgery elements associated with better patient outcomes and lower length of hospital stay (e.g., approach to pain management, nausea prevention, antibiotic administration, carbo loading and diet advancement). Anemia status, transfusion administration, pre-admission diabetes status and peri-operative glucose control along with multiple domains of post-operative patient level outcomes facilitate robust monitoring and evaluation. |
| POTENTIAL PARTNERS: |
| Surgical Care Outcomes Assessment Program, Society for Advancement of Patient Blood Management Guidelines, Washington State Hospital Association, Bloodworks Northwest |
| HOW COULD THE BREE UNIQUELY IMPACT THE HEALTH OF WASHINGTONIANS |
| Support standardization of process optimization protocols for enhanced recovery after surgery, influence inclusion of preoperative anemia evaluation / treatment and perioperative glycemic control as key indicators and partner with SCOAP to track improvement in outcomes after implementation. |

¹ Schatz C, Plötz W, Beckmann J, Bredow K, Leidl R, Buschner P. Associations of preoperative anemia and postoperative hemoglobin values with hospital costs in total knee arthroplasty (TKA). Arch Orthop Trauma Surg. 2023 Nov;143(11):6741-6751. doi: 10.1007/s00402-023-04929-4. Epub 2023 Jun 12. PMID: 37306776; PMCID: PMC10258736.

² Musallam KM, et al. Preoperative anaemia and postoperative outcomes in non-cardiac surgery: a retrospective cohort study. Lancet. 2011 Oct 15;378(9800):1396-407. doi: 10.1016/S0140-6736(11)61381-0. Epub 2011 Oct 5. PMID: 21982521.

³ Myles, P. S., Richards, T., Klein, A., Wood, E. M., Wallace, S., Shulman, M. A., Martin, C., Bellomo, R., Corcoran, T. B., Peyton, P. J., Story, D. A., Leslie, K., Forbes, A., & RELIEF Trial Investigators (2022). Postoperative anaemia and patient-centred outcomes after major abdominal surgery: a retrospective cohort study. *British journal of anaesthesia*, 129(3), 346–354. <https://doi.org/10.1016/j.bja.2022.06.014>

⁴ Hart, A., Goffredo, P., Carroll, R., Lehmann, R., Nau, P., Smith, J., Ahad, S., Bao, W., & Hassan, I. (2021). Optimizing Bariatric Surgery outcomes: the impact of preoperative elevated hemoglobin A1c levels on composite perioperative outcome measures. *Surgical endoscopy*, 35(8), 4618–4623. <https://doi.org/10.1007/s00464-020-07887-9>

⁵ van den Boom, W., Schroeder, R. A., Manning, M. W., Setji, T. L., Fiestan, G. O., & Dunson, D. B. (2018). Effect of A1C and Glucose on Postoperative Mortality in Noncardiac and Cardiac Surgeries. *Diabetes care*, 41(4), 782–788. <https://doi.org/10.2337/dc17-2232>

⁶ Mazni Y, Syaiful RA, Ibrahim F, Jeo WS, Putranto AS, Siharido L, Marbun V, Lalisang AN, Putranto R, Natadisastra RM, Sumariyono S, Nugroho AM, Manikam NRM, Karimah N, Hastuty V, Sutisna EN, Widiati E, Mutiara R, Wardhani RK, Liastuti LD, Lalisang TJM. The enhanced recovery after surgery (ERAS) protocol implementation in a national tertiary-level hospital: a prospective cohort study. *Ann Med Surg (Lond)*. 2023 Dec 8;86(1):85-91. doi: 10.1097/MS9.0000000000001609. PMID: 38222714; PMCID: PMC10783346.

