

FD ID: FD2089**Requestor Name:** Frederick Sieber**Requestor Institution:** Johns Hopkins**Project Title:** Comparative effectiveness for delirium prevention: nurse guided vs standardized frequency of reorientation in the post anesthesia care unit

Background/Rationale: Common in older adults, postoperative delirium (POD) extends hospital stays, increases discharges to rehabilitation facilities, and raises readmission rates. It hinders recovery, causing emotional distress for patients and families. POD acts as a trigger for long-term cognitive decline, impacting independence and society. With Medicare costs exceeding \$44,000 per patient after a new delirium event, preventing POD improves patient outcomes, family well-being, and reduces healthcare burdens. Multicomponent non-pharmacologic interventions prevent POD (RR= 0.57; 95% CI [0.46 - 0.71]). Furthermore, individual component network meta-analysis shows that among the various components, reorientation has the greatest effect in decreasing incident delirium risk. However, there is an evidence gap concerning the lack of head-to-head trials attempting to identify the effectiveness and necessity of specific components of multicomponent interventions. Filling this gap with comparative effectiveness evidence is critical to the optimal utilization of these interventions. Specifically, simplification of the intervention would greatly improve utilization in practice. Currently, there are two clinical paradigms by which reorientation therapy is initiated in the PACU: via nurse guided clinical judgement per American Society of Perianesthesia Nurses (ASPAN) guidelines and via standardized frequency per the American Society of Anesthesiologists (ASA) guidelines. Yet it is unclear which PACU reorientation practice parameter is most effective in POD prevention. This proposal will determine in a PACU setting the comparative effectiveness for POD prevention of reorientation in a head-to-head trial comparing PACU reorientation as applied with nurse guided vs standardized frequency reorientation protocols. There is a critical need to mitigate the deficiency of clinical evidence in this area. We want to help the decision makers that manage PACUs, health care workers, patients and families decide whether reorientation done on a standardized frequency vs clinical judgement basis leads to better outcomes on the basis of this new clinical evidence. This will inform decision-making for PACU staff, healthcare workers, patients, and families, clarifying resource allocation for POD prevention. This proposal focuses on the frail elderly because of the increasing prevalence (18.6%- 56% in elective surgery patients \geq 65 years) and higher POD risk vs non-frailty (OR = 2.14; 95% CI [1.43–3.19]). Supporting evidence from meta-analysis and our preliminary data in such frail patients showing POD reductions with PACU reorientation protocols lead us to believe that a critical location where POD can be reduced is the PACU. We will look for heterogeneity in POD outcomes based on frailty severity, using the Edmonton Frailty Scale (EFS), to determine whether reorientation resources can be focused on a specific at risk group. There are questions concerning which frailty populations are more likely to respond to POD prevention with reorientation protocols. With a nursing shortage, focusing resources on effective POD prevention is crucial. This study will guide decision-making on the intensity and training needed for delirium interventions, maximizing impact with limited resources. Reorientation, a simple, well-established PACU competency, is ideal for seamless implementation. Nurses spend more time on assessments than interventions. We aim to shift this by demonstrating the value of reorientation through evidence-based practice, promoting nurse buy-in for this effective intervention.

Specific Aims: Research question: What is the comparative effectiveness for decreasing POD of a PACU nurse guided vs the standardized frequency reorientation protocol in frail patients?

Primary aim 1: To determine whether a PACU nurse guided vs standardized frequency PACU reorientation protocol will decrease POD through postop day 1 and lead to improvements in the consensus driven core outcomes set for delirium prevention clinical trials(rose) in frail patients.

Aim 2: To analyze for heterogeneity in POD prevention across different strata of frailty severity.

Aim 3: To determine outcomes and change in reorientation practice in non-study patients using PCORnet common data model to assist with feedback to stake holders and dissemination of study results.

Intervention (if applicable): Comparators: nurse guided vs standardized frequency PACU reorientation protocols tested in a step wedge design.

Nurse guided: Nurses use professional judgment to determine how often to reorient patients in the PACU and whether to provide them with visual or hearing aids to aid in reorientation. There is no standardized frequency for reorientation. This approach is supported by ASPAN guidelines, which state that reorientation should be provided based on the patient's individual needs. Furthermore, these operational standards guiding nursing PACU care don't specify the necessity of reorientation. As a result, some patients will not be reoriented at all during their PACU stay. Nurse guided PACU reorientation is a common reorientation practice model.

Standardized frequency: ASA guidelines recommend a standard frequency of reorientation and delirium assessment of at least once during the usual 2-hour PACU stay. In addition, obtaining and using patient visual and hearing aids while in PACU arrival is recommended to aid in reorientation. With prolonged PACU stay, reorientation is to be performed every four hours thereafter. In many U.S. academic centers the standardized frequency PACU reorientation model is employed.

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