



# Elevating Patient Safety in Perianesthesia Care: A Quality Improvement Initiative on Aminolevulinic Acid HCl (Gleolan) Use

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## Background

Glioblastomas are the most common malignant primary brain tumors, significantly contributing to brain tumor-related mortality. **Surgical resection is crucial** for improving survival. **Aminolevulinic Acid HCl (Gleolan)**, an optical imaging agent, enhances tumor visualization through fluorescence, aiding in **maximum tumor removal while preserving healthy tissue**.

Despite its benefits, **safety incidents** related to **Gleolan administration and communication breakdowns** were reported in the perioperative setting. A **pre-intervention survey of Perianesthesia (PACU) staff** revealed **knowledge gaps in Gleolan use, preoperative administration, contraindications, and postoperative precautions**.

## Purpose

This **quality improvement initiative** aimed to:

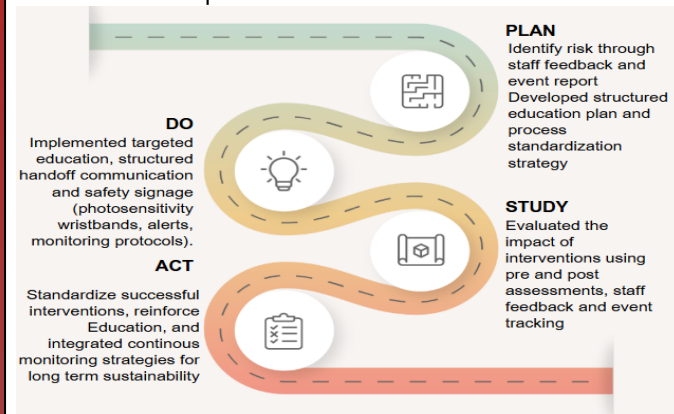
- **Enhance nursing staff knowledge** of Gleolan use and precautions in perioperative neurosurgery units.
- **Improve staff education, EMR modifications, and structured handoff communication to reduce Gleolan-related safety events.**

## Literature Review

Effective communication and interdisciplinary collaboration are essential for improving patient safety in perioperative care. **Müller et al. (2018)** highlight that structured handoff tools, such as SBAR, significantly reduce communication errors and enhance clinical outcomes. **Muh et al. (2021)** emphasize that interprofessional collaboration strengthens safety protocols by promoting shared decision-making and accountability. Additionally, **Alexander et al. (2021)** report that photosensitivity reactions following **Aminolevulinic Acid HCl (Gleolan) administration** require careful perioperative management, reinforcing the need for standardized precautions and staff education. These findings support the implementation of structured handoff protocols, EMR modifications, and nursing education to mitigate safety risks in Gleolan administration.

## Interventions

This initiative was guided by the PDSA (Plan-Do-Study-Act) model, a structured quality improvement framework ensuring systematic problem-solving, intervention assessment, and continuous improvement.



## OUTCOME

This project, launched in 2022, aimed to enhance Gleolan safety through phased quality improvements. Ongoing monitoring shows minimal safety events, demonstrating sustained impact.

### Reduction in Safety Events:

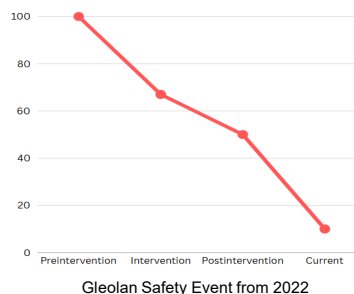
**50% decrease in Gleolan-related safety events within the first year.**

Continued downward trend, with current events at an all-time low.

### Improved Staff Confidence & Compliance:

Higher adherence to safety protocols.

Increased staff confidence in Gleolan administration and patient safety.



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## References



## Discussion

This quality improvement initiative, guided by the PDSA model, enhanced the safety of Gleolan administration in the perioperative setting. By focusing on interdisciplinary collaboration, structured communication, and targeted education, the initiative achieved measurable improvements in patient safety and compliance.

### Key Takeaways:

- **Champion Engagement:** Identifying stakeholders accelerated intervention adoption.
- **Collaboration:** Strengthened teamwork improved communication and efficiency.
- **Standardized Processes:** Integrated handoff protocols and limb alerts ensured consistency.
- **Targeted Education:** Provided staff and patient education on safe Gleolan administration. Safety Measures: Implemented wristbands and signage to raise awareness of precautions.

These efforts led to lasting improvements in safety outcomes, highlighting the value of structured quality improvement in perioperative care.



## Implications for Practice and Future Research

- Sustaining educational efforts is crucial for maintaining safety improvements.
- Further studies should explore the long-term impact of structured handoff protocols in reducing medication-related safety events.