CLEARING THE AIR:

Advancing Patient and Staff Safety Through a Surgical Smoke-Free Initiative

Amanda Schoppe, BSN, RN, CRN for OR/GI/SPD at MGMC

Mary Greeley MEDICAL CENTER

OBJECTIVE

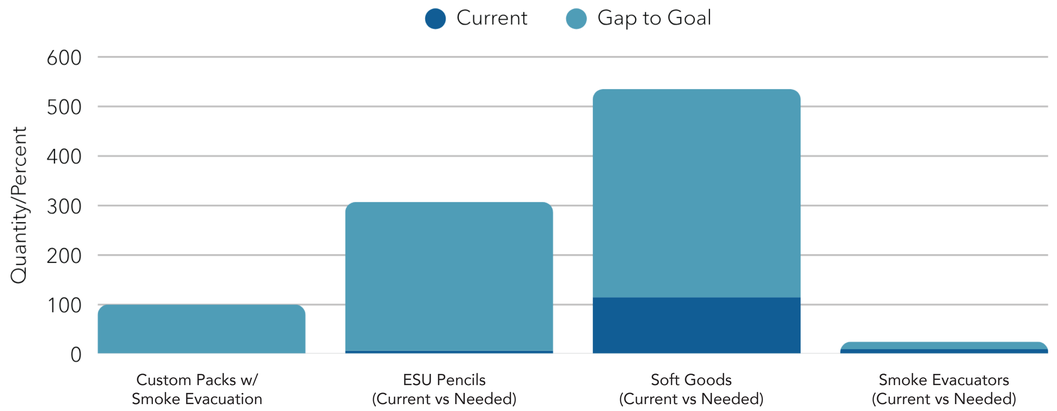
To describe the development, implementation, and outcomes of a multidisciplinary initiative at Mary Greeley Medical Center to achieve surgical smoke-free status through the AORN Center of Excellence in Surgical Safety: Smoke Evacuation program, with an emphasis on enhancing patient safety by reducing exposure to harmful airborne contaminants, decreasing the risk of surgical site infection, improving intraoperative visibility, and promoting a cleaner, safer surgical environment-while increasing staff compliance, standardizing education, policies, and strengthening a culture of safety in the operating room.

BACKGROUND

Surgical smoke poses a significant health risk to both patients and perioperative staff, containing toxic chemicals bioaerosols, and carcinogenic particles that compromise operating room safety. Exposure from cauterizing just 1 gram of tissue with an electrosurgical unit is comparable to inhaling the smoke of approximately 6 cigarettes in 15 minutes, underscoring the routine nature of this hazard. While more than 20 states have enacted legislation requiring smoke evacuation systems, Iowa has not yet established a statewide mandate. Currently, only seven hospitals and surgery centers in the state have achieved AORN smoke-free designation, though others have voluntarily adopted these practices.

At Mary Greeley Medical Center, the push to become smoke-free was initiated by a surgical technologist who experienced firsthand the effects of smoke exposure and advocated for a change. This effort highlights the importance of leadership and proactive, evidence-based practice in the absence of regulatory requirements. Implementing smoke evacuation not only protects staff and patients but also supports recruitment and retention by demonstrating a commitment to workplace safety and well-being. Achieving AORN Center of Excellence designation would further enforce the organization's dedication to providing a safe high-quality environment for all.

Surgical Smoke-Free Initiative: Baseline Gaps



ACTIONS TAKEN

- Initiated Stryker SafeAir smoke evacuation pencil trials at the end of March 2026, at ASC; expanded to MGMC.
- Formed a multidisciplinary team including perioperative staff, providers, and support services.
- Enrolled in AORN Center of Excellence in Surgical Safety: Smoke Evacuation program.
- Completed gap analysis and held project kickoff on April 2 to define goals and next steps.
- Finalized product evaluation at the end of April with staff feedback and vendor report.
- Notified providers (May 4) of transition to a smoke-free surgical environment.
- Implemented staff education via AORN modules; secured provider compliance through waivers.
- Procured smoke evacuation equipment on May 19.
- Scheduled hands-on staff training for May 29 (device use, Neptune integration, HEPA filtration).
- Planned go-live implementation for June 1, 2026, in OR and Birthways.
- Developed Surgical Smoke Safety policy aligned with AORN guidelines.

ANALYSIS

Evaluation of the Stryker SafeAir Smoke Evacuation Pencil across MGMC and ASC demonstrated strong clinical acceptance, high user satisfaction, and consistent performance across a wide range of surgical specialties.

Key Themes Identified

- Maintains clear surgical field (improved visibility).
- Preference for lightweight, less bulky design.
- Effective smoke evacuation performance.

Adoption & Engagement

- ~90% of surgeons participated in trials, indicating strong engagement.
- Broad support from surgeons and staff for transitioning to a smoke-free environment.

Operational Considerations

- Most providers used suction settings between 6-100% for optimal performance.
- Identified needs: longer electrode tips, room setup adjustments, suction noise management, and occasional use of fluid traps.

Culture & Safety Impact

- Increased staff awareness of surgical smoke risks
- Positive perception of leadership commitment to safety
- Supports culture shift toward standardized smoke evacuation practices.

NEXT STEPS

- **Complete compliance monitoring:** Conduct three months of surgical smoke evacuation audits in the Operating Room and Birthways to evaluate adherence and identify opportunities for improvement.
- **Expand implementation:** Roll out smoke evacuation practices and equipment to the Cardiac Catheterization lab.
- **Standardize supply integration:** Ensure all custom surgical packs include smoke evacuation pencils to support consistent practices.
- **Sustain education:** Develop and implement an annual computer-based learning (CBL) module to maintain staff competency and reinforce best practices.
- **Achieve recognition:** Submit all required documentation to obtain the AORN Center of Excellence in Surgical Safety: Go Clear Award.

AORN Center of Excellence in Surgical Safety

GO CLEAR AWARD™

SURGICAL SMOKE EVACUATION RECOGNITION