Title: Enhancing Staff Safety in the Operating Room (OR): The Role of the Automatic Formalin Dispense Machine

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INTRODUCTION

Background

- Formaldehyde:
  - Sensitizing agent that affects the immune system response upon initial exposure
  - Linked to carcinogenic effects, and respiratory issues through inhalation
  - Hazards: Skin irritation, allergic reaction, serious eye damage, cause cancer, and damage nervous system
- Regulatory bodies mandate organizations to provide a leak-proof and puncture -resistant containers to prevent formalin spills and exposure to fumes
- Baseline assessment to chemical exposure:
  - Top five safety incidents in the operating room (OR) from October 2023 to May 2024
  - Out of twenty-two incidents, 13% were reported as chemical exposure

Purpose/Aim

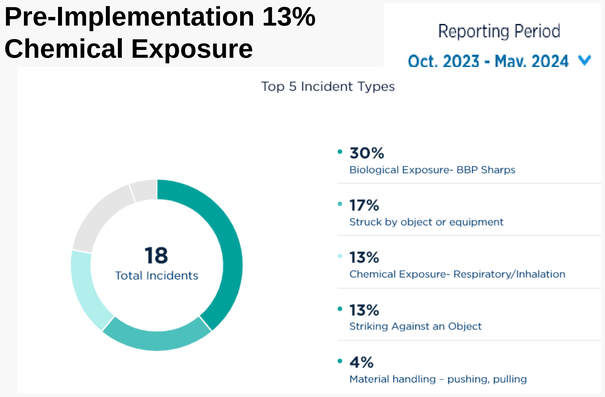
- Implement automatic formalin dispensing machine in the OR and decrease chemical exposure (e.g., respiratory exposure through inhalation)
- Staff can take control and eliminate exposure to fumes and reduce potential for spills
- Seeks to acquire feedback from the OR staff regarding workplace safety & efficiency

METHODS

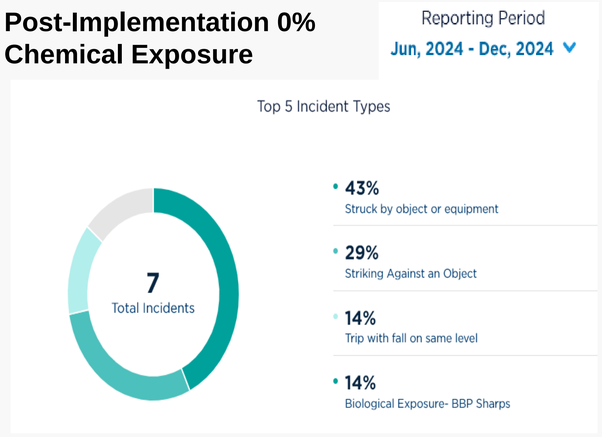
Implementation

- Analysis on the existing formalin handling procedures and identifying high-risk points for spills and fume exposure
- A cost-benefit analysis and product evaluation for the automatic formalin dispensing machine
- Selection and installation of automatic formalin dispensing machine
- Vendor-lead training for superusers and hands-on training on the first week of implementation to all staff
- Close monitoring for compliance
- Real-time feedback and process adjustment to mitigate issues
- Post-implementation staff survey through Microsoft Forms

Pre-Implementation 13% Chemical Exposure



Post-Implementation 0% Chemical Exposure



RESULTS

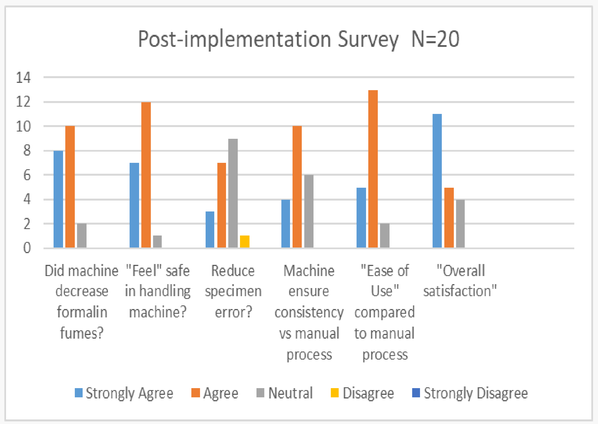
Outcome

- Technological advancement mitigated occupational hazards
- Reduction in formalin exposure and spills
- Zero spills since implementation in May 2024
- Staff reported increased confidence in handling specimen
- Higher perception of safety
- Precision of formalin dispensing enhanced, ensuring optimal conditions for specimen preservation

Post-Implementation Survey Results

- Conducted 5 months after implementation

OR Tech/ Certified Scrub Tech	4
Other	2
RN	14
Grand Total	**20**



IMPLICATIONS FOR PRACTICE

This Quality Improvement initiative highlights:

- The importance of involving a multidisciplinary team in quality improvement projects
- Acknowledge the critical role of perioperative nurses in promoting and maintaining a safe OR environment
- Project's continued success is determined by the perioperative nursing role in the implementation and sustainability of the project
- By ensuring the safe handling of formalin, perioperative nurses help to maintain a safe environment, ultimately enhancing overall surgical care quality.

The perioperative nurse's responsibilities include:

- Serving as superusers who can train staff as needed
- Adhering to maintenance protocols
- Ongoing monitoring of formalin exposure levels
- Similar interventions could benefit other hospital settings, contributing to broader healthcare safety and quality efforts

REFERENCES

Scan QR code for references and contact information

"The Research Determination Committee for the Kaiser Permanente Northern California region has determined the project does not meet the regulatory definition of research involving human subjects per 45 CFR 46.102(d)"