Workplace-related Reproductive Hazards, Exposures and Mitigation Strategies for Anesthesiologists who are Pregnant and/or Conceiving: A Scoping Review

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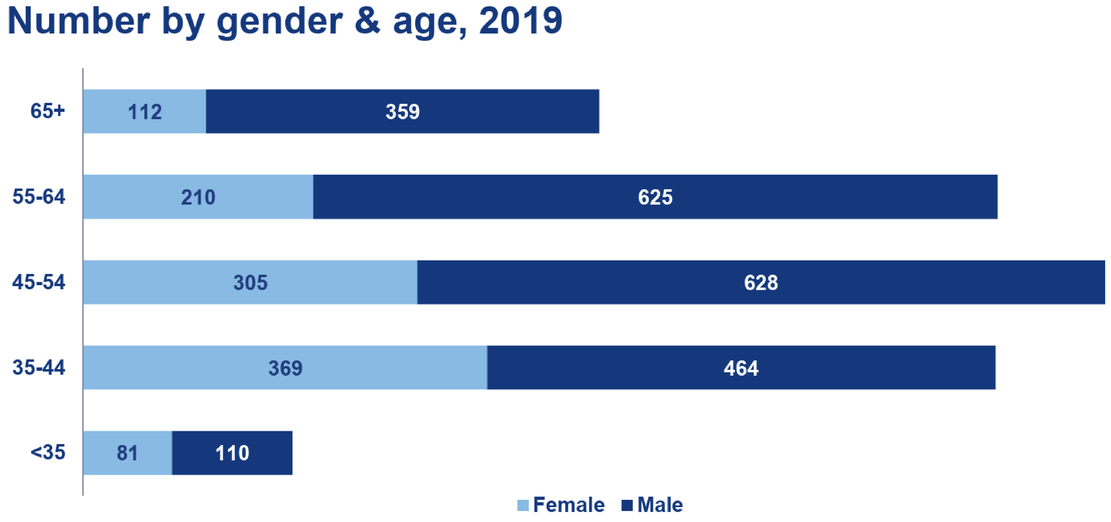
Background



Problem

Workplace hazards and exposures effect on:

- Fertility
- Pregnancy
- Maternal-fetal health

Aims

1. Evaluate workplace exposures and reproductive outcomes
2. Assess mitigation strategies and implementation barriers

Study Design and Methods

Design & Data Source

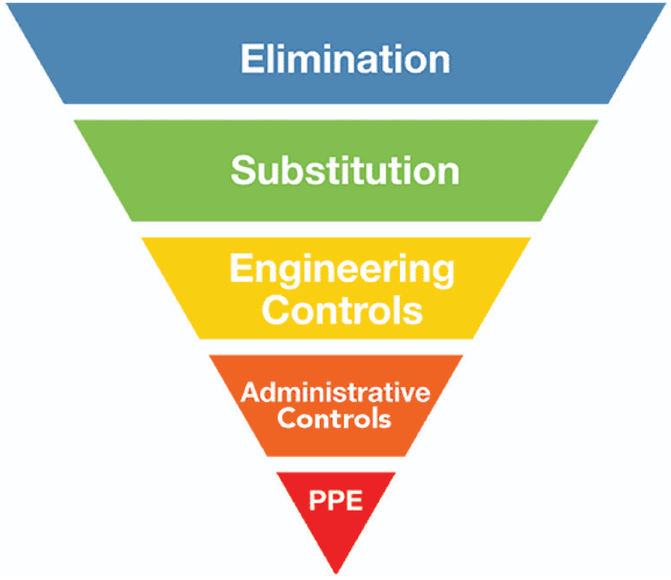
- JBI methodology, PRISMA-ScR
- MEDLINE, Embase, CINAHL, Web of Science, Cochrane Central Register of Controlled Trials, Grey literature

Inclusion Criteria

- Address **workplace hazards and exposures** with any **risk mitigation strategies**
- Relevant to **anesthesiologists or trainees** who are **pregnant or attempting conception**
- Full texts from **Jan 2000 – June 2025**

Data Extraction & Analysis

- Thematic analysis
  - Hazard categories
  - Hierarchy of controls
- GRADE



Results

Studies

- **6,792** records screened → **33** studies included

Key Exposures

- Most common hazards:
  - **Physical** (n=22), **Chemical** (n=20)
  - Radiation, anesthetic gases, long hours, manual handling, & workplace stress

Health Outcomes

- Miscarriage (n=19)
- Preterm birth (n=13)
- Congenital anomalies (n=13)

Mitigation

- Protective lead
- Scavenging systems
- Duty modifications

Barriers

- Limited exposure monitoring
- Lack of institutional policies
- Workplace stigma

Evidence Quality

- Low (no RCTs)
- Heterogeneous

Conclusion and Discussion

Key Takeaways

- ✓Anesthesiologists face multifactorial reproductive risks
- ✓Causality remains unclear
- ✓Gap: recommended vs. implemented protections

Clinical Implications

- ✓Precautionary approach
- ✓Standardized institutional policies, improved exposure monitoring & culture shift

Future Directions

- ✓Higher-quality, prospective studies