Position Statement

American Society of PeriAnesthesia Nurses

A Position Statement on Air Quality and Occupational Hazards

The American Society of PeriAnesthesia Nurses (ASPAN) has the responsibility for identifying perianesthesia occupational exposure hazards. According to the U.S. Bureau of Labor Statistics, registered nurses (RNs) have experienced some of the highest injury and illness rates, including overexertion, falls, slips and trips.[1] Nurses are frequently in close contact with patients with infectious diseases and nurses may be exposed to harmful pharmaceuticals and other substances.[1] The recent pandemic has raised awareness of the increased risk of transmission of airborne diseases, the critical need for personal protective equipment and environmental solutions.[2-8] In addition to pathogens, exposure to waste anesthetic gases (WAGs) in the perianesthesia environment may pose a hazard to healthcare workers (HCWs).[9-14] ASPAN has an obligation to protect perianesthesia patients, visitors, perianesthesia registered nurses, and other HCWs by promoting interventions which address the prevention and elimination of occupational hazards in the perianesthesia environment.

Background

Generally, the PACU design is a large, open room with high volume and fast turnover. The high risk of transmission of droplet-spread, airborne pathogens and WAGs among patients and HCWs remain a concern.[15] Many current architectural and engineering designs for airflow and ventilation systems do not sufficiently capture environmental pollutants nor adequately dilute WAGs found in the breathing zone of the nurse and the patient nor address cross contamination between patients and HCWs.[11,16] The standard for air exchanges in the PACU is to provide, as a proposed minimum, a total of six air exchanges per hour with a minimum of two air changes of outdoor air per hour.[16] These exchanges are recommended to adequately dilute WAGs.

The following issues pertinent to perianesthesia occupational hazard exposure prevention were identified:

1. General air quality issues:
    a. Open architectural designs including lack of air exchanges of perianesthesia care areas increase the risks of transmission of respiratory pathogens and airborne microbes among patients and between patients and HCWs
    b. Aging buildings with inadequate air filtration and ventilation systems[17]
    c. Increased risk of exposure to droplet and airborne infectious diseases
    d. Airborne environmental exposure to cleaning and disinfectant agents[13]
2. Waste anesthetic gases issues:
    a. Exposure to WAGs above National Institute for Occupational Safety and Health Recommended Exposure Limit (NIOSH REL) exhaled by patients in the breathing zone of nurses providing care at the bedside[9,18,19,20]

b. Lack of sufficient monitoring of WAGs within the breathing zone of PACU patients following general anesthesia
c. Lack of engineering control interventions to reduce the level of WAGs exposure

Position

It is, therefore, ASPAN's position that necessary, appropriate, and evidence-based protective engineering controls, technologies, work practices, and appropriate personal protective equipment be utilized in the perianesthesia environment.

ASPAN advocates for a perianesthesia environment that promotes patient health and safety.

ASPAN recommends that occupational exposure to respiratory pathogens as well as waste anesthetic gases be controlled by adherence to regulations and guidelines set forth by nationally recognized agencies (e.g., National Institute for Occupational Safety and Health [NIOSH], Centers for Disease Control and Prevention [CDC], Occupational Safety and Health Administration [OSHA]) to establish a hierarchy of controls based on principles of good industrial hygiene.[18]

ASPAN further recommends adherence to identified regulations and guidelines that protect HCWs and patients at risk in the perianesthesia environment.

ASPAN supports the development of healthcare policies addressing improved air quality and reduction of occupational exposure hazards.

ASPAN supports additional research studies and encourages collaboration with other professionals to improve air quality and safety related to occupational hazards exposure to patients and HCWs.

Expected Outcomes

Perianesthesia registered nurses will acquaint themselves with perianesthesia occupational hazard exposure safety issues by obtaining and reviewing the reference documentation developed by ASPAN in support of this position.

Based upon this data, perianesthesia registered nurses will seek opportunities to inform and educate others involved in decision-making processes related to the perianesthesia care environment.

ASPAN, as the voice of perianesthesia nursing practice, will externalize this information by sharing this position statement with organizations and stakeholders involved in the planning and provision of quality, safe patient care in the perianesthesia environment and advocate for a safe work environment for HCWs. ASPAN will collaborate interprofessionally with experts in identifying, preventing, and eliminating environmental hazards in the perianesthesia care environment.

Approval of Statement

This statement was endorsed by a vote of the ASPAN Board of Directors on April 9, 2016, in Philadelphia, Pennsylvania, and approved by a vote of the ASPAN Representative Assembly on May 15, 2016.

This position statement was updated and revised at the October 2021 virtual meeting of the Standards and Guidelines Strategic Work Team in Cherry Hill, NJ.

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ADDITIONAL READING

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