Billing Code

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Disease Control and Prevention**

**[30Day-26-0222]**

**Agency Forms Undergoing Paperwork Reduction Act Review**

In accordance with the Paperwork Reduction Act of 1995, the Centers for Disease Control and Prevention (CDC) has submitted the information collection request titled, "Occupational Exposures to Waste Anesthetic Gases in Healthcare Professionals" to the Office of Management and Budget (OMB) for review and approval. CDC previously published a "Proposed Data Collection Submitted for Public Comment and Recommendations" notice on June 16, 2025 to obtain comments from the public and affected agencies. CDC received one comment related to the previous notice. This notice serves to allow an additional 30 days for public and affected agency comments.

CDC will accept all comments for this proposed information collection project. The Office of Management and Budget is particularly interested in comments that:

(a) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(b) Evaluate the accuracy of the agencies estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(c) Enhance the quality, utility, and clarity of the information to be collected;

(d) Minimize the burden of the collection of information on those who are to respond, including, through the use of appropriate automated, electronic, mechanical, or other

technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses; and

(e) Assess information collection costs.

To request additional information on the proposed project or to obtain a copy of the information collection plan and instruments, call (404) 639-7570. Comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to www.reginfo.gov/public/do/PRAMain. Find this particular information collection by selecting "Currently under 30-day Review - Open for Public Comments" or by using the search function. Direct written comments and/or suggestions regarding the items contained in this notice to the Attention: CDC Desk Officer, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503 or by fax to (202) 395-5806. Provide written comments within 30 days of notice publication.

Proposed Project

Occupational Exposures to Waste Anesthetic Gases in Healthcare Professionals – New – National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC).

Background and Brief Description

Waste anesthetic gases (WAGs) refer to anesthetic gases and vapors that are released or leaked into the surrounding areas during the administration of anesthesia to patients in operating rooms (ORs), recovery in postanesthetic care units (PACUs), and patient care in intensive care units in human and veterinary hospitals. Common inhaled anesthetics involve nitrous oxide ($N_2O$) and halogenated agents such as isoflurane, desflurane, and sevoflurane. These agents may be used individually or in combination, depending on the type of surgery being performed.

While human and veterinary medical environments differ, occupational exposure to WAGs is detrimental in both sectors. Acute WAG exposure is linked to symptoms including nausea, dizziness, headache, fatigue, irritability, drowsiness, and difficulties with judgement and coordination. Chronic exposure health effects include DNA damage, genotoxicity, increased oxidative stress, cancer, and liver and kidney disease. However, adverse reproductive outcomes (AROs) of spontaneous abortion, premature delivery, genetic damage, and birth defects are a particular matter of concern because of conflicting published results. Conflicting evidence on WAGs and AROs are primarily attributed to methodological errors and weak study designs, including lack of exposure data and related job exposure matrices (JEM), use of gas mixtures, insufficient sample size, selection bias, etc. Accurate quantification of WAG exposures is key to the epidemiologic study of AROs among healthcare and veterinary workers (HCVWs) and in developing JEMs for healthcare workers in PACUs in human hospitals and veterinary hospitals (VHs). However, only a few studies have collected WAG exposures for HCVWs in PACUs of human hospitals and VHs.

In addition, most health effect studies were conducted when co-exposure to halogenated agents and $N_2O$, which often happens in human hospitals, occurred. There is a need to determine whether adverse health outcomes are caused by halogenated agents alone. To our knowledge, this is the first study to investigate the relationship between WAG exposure and acute symptoms in HCVWs. This is also one of the few studies to assess halogenated agents without co-exposure to $N_2O$. Most VHs use only a halogenated agent during anesthesia and assessing WAG exposures and acute health symptoms among workers in VHs is critical to determine acute health effect by halogenated agents only. Finally, limited data on HCVW exposures to WAGs in PACUs and VHs suggest that recommending and implementing control strategies to minimize WAG exposure is challenging.

The purpose of the proposed data collection is to assess occupational exposures to WAGs in HCVWs in PACUs and VHs, examine associated adverse acute health effects of WAGs, and

recommend control measures to reduce WAG exposures in PACUs and VHs. We will focus on sevoflurane (primary gas used), desflurane, and isoflurane, which are the most commonly used anesthetic gases in human hospitals.

The target number of total participants is 280 — 150 subjects for the exposure assessment (75 each with PACUs/VHs) and 130 for the post-shift questionnaire (65 each with PACUs/VHs) — covering multiple hospitals. Our goal is to have 150 participants — 75 from each of the PACUs and VHs — who complete both the exposure assessment and the post-shift questionnaire. However, in practice, some healthcare workers might participate in the exposure assessment without completing the post-shift questionnaire, and vice versa. If this occurs, we need 150 workers (75 from PACUs and 75 from VHs) to complete the exposure assessments, regardless of their participation in the questionnaire and at least 130 workers to complete the questionnaires (65 from PACUs and 65 from VHs) regardless of their involvement in the exposure assessment. Therefore, the maximum sample size for this study will be 280 (in the unlikely event that the 150 that complete the exposure assessment are different from the 130 that complete the post-shift questionnaires).

The burden hour estimates for the exposure assessment and post-shift questionnaire are presented in the table below. The anticipated duration of worker contact is approximately 55 minutes: 10 minutes each for obtaining the informed consent forms, 10 minutes for putting on and taking off sampling devices, 20 minutes for completing the full post-shift questionnaire, and five minutes for completing the questionnaire that focuses solely on acute health symptoms. For workers participating in our study over multiple days, the post-shift questionnaire will concentrate solely on acute health symptoms related to that specific sampling date, requiring less than five minutes to finish. However, due to uncertainty regarding how many workers will participate in our study across multiple days, we estimated the burden hours by assuming that 50% of participants would take part in the study at least twice. The total estimated respondent burden is 124 hours (62 hours for the healthcare workers in PACUs and 62 for the healthcare

workers in VHs). CDC is requesting OMB approval for three years. There is no cost to respondents other than their time to participate.

Estimated Annualized Burden Hours

| Type of Respondents | Form Name | Number of Respondents | Number of Responses per Respondent | Average Burden per Response (in hours) |
|---|---|---|---|---|
| Healthcare workers in PACUs | Informed Consent (Exposure assessment) | 75 | 1 | 10/60 |
| | Informed Consent (Questionnaire) | 65 | 1 | 10/60 |
| | Donning/Doffing sampling devices | 75 | 1 | 10/60 |
| | Post-shift questionnaire (full) | 65 | 1 | 20/60 |
| | Post-shift questionnaire (acute symptoms focused) | 33 | 1 | 5/60 |
| Healthcare workers in veterinary hospitals | Informed Consent (Exposure assessment) | 75 | 1 | 10/60 |
| | Informed Consent (Questionnaire) | 65 | 1 | 10/60 |
| | Donning/Doffing sampling devices | 75 | 1 | 10/60 |
| | Post-shift questionnaire (full) | 65 | 1 | 20/60 |
| | Post-shift questionnaire (acute symptoms focused) | 33 | 1 | 5/60 |

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[FR Doc. 2026-11821 Filed: 6/11/2026 8:45 am; Publication Date: 6/12/2026]