



## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Centers for Disease Control and Prevention

[60Day-25-0079; Docket No. CDC-2025-0022]

### Proposed Data Collection Submitted for Public Comment and Recommendations

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice with comment period.

**SUMMARY:** The Centers for Disease Control and Prevention (CDC), as part of its continuing effort to reduce public burden and maximize the utility of government information, invites the general public and other federal agencies the opportunity to comment on a proposed information collection, as required by the Paperwork Reduction Act of 1995. This notice invites comment on a proposed information collection project titled Occupational exposures to waste anesthetic gases in healthcare professionals. The purpose of the proposed data collection is to assess occupational exposures to waste anesthetic gases (WAGs) in healthcare and veterinary workers in postanesthetic care units (PACUs) and veterinary hospitals, examine associated adverse acute health effects of WAGs and recommend control measures to reduce WAG exposures for healthcare and veterinary workers in PACUs and veterinary hospitals.

**DATES:** CDC must receive written comments on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION DATE IN THE FEDERAL REGISTER].

**ADDRESSES:** You may submit comments, identified by Docket No. CDC-2025-0022 by either of the following methods:

- Federal eRulemaking Portal: [www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments.
- Mail: Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road, NE, MS H21-8, Atlanta, Georgia 30329.

**Instructions:** All submissions received must include the agency name and Docket Number.

CDC will post, without change, all relevant comments to [www.regulations.gov](http://www.regulations.gov).

Please note: Submit all comments through the Federal eRulemaking portal

([www.regulations.gov](http://www.regulations.gov)) or by U.S. mail to the address listed above.

**FOR FURTHER INFORMATION CONTACT:** To request more information on the proposed project or to obtain a copy of the information collection plan and instruments, contact Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road, NE, MS H21-8, Atlanta, Georgia 30329; telephone: 404-639-7570; e-mail: [omb@cdc.gov](mailto:omb@cdc.gov).

**SUPPLEMENTARY INFORMATION:** Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501-3520), federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. In addition, the PRA also requires federal agencies to provide a 60-day notice in the *Federal Register* concerning each proposed collection of information, including each new proposed collection, each proposed extension of existing collection of information, and each reinstatement of previously approved information collection before submitting the collection to the OMB for approval. To comply with this requirement, we are publishing this notice of a proposed data collection as described below.

The OMB is particularly interested in comments that will help:

1. 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;
2. Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
3. Enhance the quality, utility, and clarity of the information to be collected;

4. 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 submissions of responses; and
5. Assess information collection costs.

## **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<sub>2</sub>O) 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 of spontaneous abortion, premature delivery, genetic damage, and birth defects (hereinafter called AROs) 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 (JEMs), 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. However, only a few studies have collected WAG exposures for HCVWs in PACUs of human hospitals and veterinary hospitals.

In addition, most health effect studies were conducted when co-exposure to halogenated agents and N<sub>2</sub>O, which often happens in human hospitals, occurred. There is a need to determine whether adverse health outcomes are caused from 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<sub>2</sub>O. Most veterinary hospitals use only a halogenated agent during anesthesia and assessing WAG exposures and acute health symptoms among workers in veterinary hospitals is critical to determine acute health effect by halogenated agents only. Finally, limited data on HCVW exposures to WAGs in PACUs and veterinary hospitals suggests 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 veterinary hospitals, examine associated adverse acute health effects of WAGs and recommend control measures to reduce WAG exposures for healthcare and veterinary workers in PACUs and veterinary hospitals. We will focus on sevoflurane, desflurane, and isoflurane. Comprehensive exposure assessment will be performed at multiple worksites by measuring workers' exposure to WAGs in their breathing zone using sampling devices including time-integrated instruments and a real-time instrument (optional) and area air concentrations to WAGs using the same devices used in personal exposure sampling. Additionally, room air flows will be measured where appropriate, and detailed contextual information on workplace characteristics will be systematically collected on a standardized form based on workplace observations. At the end of participant' shift, post-shift questionnaire will be administered by a NIOSH staff in a private room to ensure confidentiality.

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. Ideally, we want a sample size of 150 participants (75 subjects each within PACUs/VHs) that complete both the exposure assessment and post-shift questionnaire. 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 below. The anticipated duration of worker contact is approximately 45 minutes: 10 minutes for obtaining the informed consent document, 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 respondent burden hours are 122 hours (61 hours for the healthcare workers in PACUs and 61 for the healthcare workers in veterinary hospitals). 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	No. of Respondents	No. of Responses per respondent	Average Burden per Response (in hours)	Total Burden (in hours)
Healthcare workers in PACUs	Informed Consent	140	1	10/60	23
	Donning/Doffing sampling devices	75	1	10/60	13
	Post-shift questionnaire (full)	65	1	20/60	22
	Post-shift questionnaire (acute symptoms focused)	33	1	5/60	3
Healthcare workers in veterinary hospitals	Informed Consent	140	1	10/60	23
	Donning/Doffing sampling devices	75	1	10/60	13
	Post-shift questionnaire (full)	65	1	20/60	22
	Post-shift questionnaire (acute symptoms focused)	33	1	5/60	3
Total					122

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