

**PROGRAMMING INSTRUCTIONS APPEAR IN BLUE.**

1. Are you currently a dentist or other dental professional?

- Yes
- No

IF RESPONDENT MARKED 'YES' OR IS FROM THE ADA, ADAA OR ADHA → SKIP QUESTIONS 13, 18, 19, 20, 22, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

IF RESPONDENT MARKED 'NO' → SKIP QUESTIONS 14, 15, 23, 24

2. During your career (including residency, fellowship training, etc.), how long have you been personally administering anesthetic gases to patients?  
*Please do not include instances where you supervise others who administer anesthetic gases.*

- Less than one year
- 1-5 years
- 6-10 years
- 11-20 years
- More than 20 years

**Note:** Anesthetic gases include Desflurane, Sevoflurane, Halothane, Nitrous Oxide, Enflurane and Isoflurane.

3. When was the last time you received training on the safe handling of anesthetic gases?

- Within the past 12 months
- More than 12 months ago
- I never received training

**If you work for more than one employer, the following questions apply to your primary employer, i.e., the one for which you typically work the most hours. If you are self-employed, consider yourself the employer.**

4. Does your primary employer have standard procedures to minimize worker exposure during administration of anesthetic gases?

- Yes
- No
- I don't know

Public reporting burden of this collection of information is estimated to average 9 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Reports Clearance Officer, 1600 Clifton Road NE, MS D-74, Atlanta, Georgia 30329-4018; ATTN: PRA (10AP-xxxx).

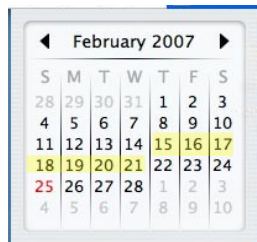
## MODULE G: Anesthetic Gases

7/23/10

5. 6. During the past 7 calendar days, which of the following anesthetic gases did you personally administer to patients?

Please  all that apply.

DISPLAY A CALENDAR HIGHLIGHTING THE PAST 7 CALENDAR DAYS. APPLIES TO ALL



QUESTIONS WITH 'IN THE PAST 7 CALENDAR DAY'

7. 8. Of these gases you checked above, please indicate the one you **most often** administered.

- Desflurane
- Sevoflurane
- Halothane
- Nitrous oxide
- Enflurane
- Isoflurane

IF ONLY ONE CHECKED, GO TO QUESTION 9

LIST THE ANESTHETIC GASES CHECKED IN QUESTION 5 (USE RADIO BUTTONS)

IF RESPONDENT MARKED NITROUS OXIDE IN QUESTION 5 AND AT LEAST ONE OTHER ANESTHETIC GAS, GO TO QUESTION 7. OTHERWISE, GO TO QUESTION 9.

9. 10. During the past 7 calendar days, did you simultaneously administer nitrous oxide with any of the following anesthetic gases?

Please  all that apply.

(LIST ALL ANESTHETIC GASES CHECKED IN QUESTION 5, EXCEPT NITROUS OXIDE)

- Yes {ANESTHETIC GAS 1 FROM QUESTION 5}
- Yes {ANESTHETIC GAS 2 FROM QUESTION 5}
- Yes {ANESTHETIC GAS 3 FROM QUESTION 5}
- ...
- No ➔ GO TO QUESTION 9

## MODULE G: Anesthetic Gases

7/23/10

IF RESPONDENT MARKED MORE THAN ONE GAS IN 7 →GO TO QUESTION 8  
OTHERWISE ↗ GO TO QUESTION 9

11. 12. Of the gases you checked above, please indicate the one you **most often** administered with nitrous oxide.

LIST THE ANESTHETIC GASES CHECKED IN QUESTION 7 (USE RADIO BUTTONS)

---

13. 14. During the past 7 calendar days, on how many days did you personally administer anesthetic gases?

- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

15. During the past 7 calendar days, in which of the following work settings did you administer anesthetic gases?

Please  all that apply.

- Hospital operating room
  - Hospital Emergency Room
  - Radiology/radiation therapy suite
  - Catheterization laboratory
  - Magnetic resonance imaging (MRI) suite
  - GI endoscopy suite
  - Labor and delivery suite
  - Outpatient surgical center
  - Office-based surgical suite
  - Dental operator/clinic
  - Teaching facility
  - Some other location (Please specify):
- 

IF RESPONSE MARKED IN QUESTION 10  GO TO QUESTION 12.

16. Of the locations you checked above, please indicate the work setting where you **most often** administered anesthetic gases during the past 7 calendar days.

LIST LOCATIONS CHECKED IN QUESTION 10 (USE RADIO BUTTONS).

## MODULE G: Anesthetic Gases

7/23/10

17. During the past 7 calendar days, did you administer anesthetic gases to **patients age 13 or older (non-pediatric patients)**?  Yes  No [GO TO QUESTION 21](#)

The next questions address work practices and use of personal protective equipment (PPE). They will help us understand what is currently used and under what circumstances. Depending on your job and exposures, PPE may not be required.

18. When administering anesthetic gases to **patients age 13 or older (non-pediatric patients)** during the past 7 calendar days, how often did you use...

|   | Every time            | Most times            | Some times            | Rarely                | Never                 | Device Not Available  |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. ...a face mask only?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. ...a face mask then switched to an airway device (i.e., endotracheal tube, tracheostomy tube or laryngeal mask)? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. ...an airway device only?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

19. When administering anesthetic gases to **patients age 13 or older (non-pediatric patients)** during the past 7 calendar days, how often did you use a patient nasal mask with scavenging system designed to remove waste anesthetic gases?



- Every time  
 Most times  
 Sometimes  
 Rarely  
 Never

## MODULE G: Anesthetic Gases

7/23/10

20. When administering anesthetic gases to **patients age 13 or older (non-pediatric patients)** during the past 7 calendar days, how often did you use a local exhaust hood placed near the patient's mouth?
- Every time
  - Most times
  - Sometimes
  - Rarely
  - Never

## MODULE G: Anesthetic Gases

7/23/10

21. When administering anesthetic gases to **patients age 13 or older (non-pediatric patients)** during the past 7 calendar days, how often did you use...

|  | Every time            | Most times            | Some times            | Rarely                | Never                 | Not Available         |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. ... <b>High flow</b> anesthesia only (on average 3-6 L/min of fresh gas)?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. ... <b>Low flow</b> anesthesia only (on average less than 3 L/min of fresh gas)?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. ... <b>High flow</b> anesthesia during induction phase <u>and</u> <b>low flow</b> anesthesia during remainder of administration | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. ...Closed system anesthesia technique?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

22. When administering anesthetic gases to **patients age 13 or older (non-pediatric patients)** during the past 7 calendar days, how often did you...

**Note:** Check 'Not Applicable' if others are responsible for the practice specified below.

|   | Every time            | Most times            | Some times            | Rarely                | Never                 | Not Applicable        |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. ...check the anesthesia machine(s), breathing circuit(s), vaporizer(s) and other components for leaks? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. ...start the anesthetic gas flow after delivery mask or airway device is applied?                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. ...turn off the anesthetic gas before turning off the flow of carrier gas to the breathing system?     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

23. During the past 7 calendar

Every time [➔ GO TO QUESTION 21.](#)

**MODULE G: Anesthetic Gases**

7/23/10

days, how often was a waste gas scavenging system used when you administered anesthetic gases to **patients age 13 or older (non-pediatric patients)**?

- Most times
- Sometimes
- Rarely
- Never

24. What were the reason(s) you did not always use a waste gas scavenging system while administering anesthetic gases to **patients age 13 or older (non-pediatric patients)**?

Please  all that apply.

- Administration method(s) alone keeps waste anesthetic gases to a minimum
- Effective general room ventilation alone keeps waste anesthetic gases to a minimum
- Administration method(s) and effective general room ventilation keep waste anesthetic gases to a minimum
- Not part of our protocol
- Not provided by employer
- No one else who does this work uses them
- Too difficult to use
- Not readily available in work area
- Other (Please specify):

IF ONLY ONE REASON MARKED IN QUESTION 19  GO TO QUESTION 21.

25. Of the reasons you checked above, please indicate the **most important reason** a waste gas scavenging system was not always used.

LIST REASONS MARKED IN QUESTION 19 (USE RADIO BUTTONS)

26. During the past 7 calendar days, did you administer anesthetic gases to **patients age 12 or younger (pediatric patients)**?

- Yes
- No [➔ GO TO QUESTION 30](#)

27. When administering anesthetic gases to **patients age 12 or younger (pediatric patients)** during the past 7 calendar days, how often did you use...

|                    | Every time            | Most times            | Some times            | Rarely                | Never                 | Device Not Available  |
|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. face mask only? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**MODULE G: Anesthetic Gases**

7/23/10

- b. face mask then switched to an airway device (i.e., endotracheal tube, tracheostomy tube or laryngeal mask)?
- c. airway device only?

28. When administering anesthetic gases to **patients age 12 or younger (pediatric patients)** during the past 7 calendar days, how often did you use a patient **nasal** mask with scavenging system designed to remove waste anesthetic gases?



- Every time
- Most times
- Sometimes
- Rarely
- Never

29. When administering anesthetic gases to **patients age 12 or younger (pediatric patients)** during the past 7 calendar days, how often did you use a local exhaust hood placed near the patient's mouth?

- Every time
- Most times
- Sometimes
- Rarely
- Never

30. When administering anesthetic gases to **patients age 12 or younger (pediatric patients)** during the past 7 calendar days, how often did you use.....

|  | Every time            | Most times            | Some times            | Rarely                | Never                 | Not Available |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------|
| a. ... <b>High flow</b> anesthesia only (on average 3-6 L/min of fresh gas)?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| b. ... <b>Low flow</b> anesthesia only (on average less than 3L/min of fresh gas)?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |
| c. ... <b>High flow</b> anesthesia during induction phase <u>and</u> <b>low flow</b> anesthesia during remainder of administration | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |               |



**MODULE G: Anesthetic Gases**

7/23/10

- d. ...Closed system anesthesia technique?

**31** When administering anesthesia as a gas to **patients age 12 or younger (pediatric patients)** during the past 7 calendar days, how often did you.....

**Note:** Check 'Not Applicable' if others are responsible for task specified below.

|  | Every time            | Most times            | Some times            | Rarely                | Never                 | Not Applicable        |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. check the anesthesia machine(s), breathing circuit(s), vaporizer(s) and other components for leaks? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. start the anesthetic gas flow after delivery mask or airway device is applied?                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. turn off the anesthetic gas before turning off the flow of carrier gas to the breathing system?     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**32** During the past 7 calendar days, how often was a waste gas scavenging system used when you administered anesthetic gases to **patients age 12 or younger (pediatric patients)**?

- Every time [↗GO TO QUESTION 30](#)
- Most time
- Sometimes
- Rarely
- Never

## MODULE G: Anesthetic Gases

7/23/10

33. What were the reason(s) you did not always use a waste gas scavenging system while administering anesthetic gases to **patients age 12 or younger (pediatric patients)**?

Please  all that apply.

- Administration method(s) alone keeps waste anesthetic gases to a minimum
- Effective general room ventilation alone keeps waste anesthetic gases to a minimum
- Administration method(s) and effective general room ventilation keep waste anesthetic gases to a minimum
- Not part of our protocol
- Not provided by employer
- No one else who does this work uses them
- Too difficult to use
- Not readily available in work area
- Other (Please specify): \_\_\_\_\_

IF ONLY ONE RESPONSE MARKED IN QUESTION 28  GO TO QUESTION 30.

34. Of the reasons you checked above, please indicate the **most important reason** a waste gas scavenging system was not always used.

LIST REASONS MARKED IN QUESTION 28  
(USE RADIO BUTTONS)

35. During the past 7 calendar days, did you personally fill anesthesia vaporizers?

- Yes
- No ➔ GO TO QUESTION 34

36. When filling anesthesia vaporizers during the past 7 calendar days, how often did you use...

- |  | Every time   | Most times            | Some times            | Rarely                | Never                                     | System Not Available  |
|--|--|-----------------------|-----------------------|-----------------------|---|-----------------------|
| a. ...a "key-filler" or other closed system  | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                     | <input type="radio"/> |
|  | ➔ GO TO QUESTION 33 AFTER ALLOWING RESPONSE TO 31b |                       |                       |                       |   |                       |
| b. ...a "funnel-fill" system (also called "pour fill" or "screw cap fill" systems) | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> ➔ GO TO QUESTION 33 | <input type="radio"/> |

## MODULE G: Anesthetic Gases

7/23/10

37. How often did you fill the vaporizer (using the “funnel-fill” system) in a location where fugitive vapors are controlled? (e.g., exhaust hood, ventilated enclosure)?
- Every time
  - Most times
  - Sometimes
  - Rarely
  - Never
38. In the **past year**, did any large spills (e.g., contents of at least one bottle of liquid anesthetic agent) occur during **filling or draining** of vaporizers?
- Yes
  - No
  - I don't know
39. Who is responsible for cleanup of large spills (e.g., contents of one bottle) of liquid anesthetic agents?
- Designated spill cleanup team
  - Person causing the spill, but only if properly trained
  - Person causing the spill, even if untrained
  - Other (Please specify): \_\_\_\_\_
  - I don't know

40. During the past 7 calendar days, how often was the patient ...

**Note:** Check ‘Not Applicable’ if practice specified below is not part of protocol.

|  | Every Time            | Most times            | Some times            | Rarely                | Never                 | Not Applicable        |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a. ...extubated (using endotracheal tube) in the operating room as they awakened from anesthesia?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. ...transferred to the recovery area while still anesthetized and intubated with endotracheal tube, and allowed to wake up in recovery area? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. ...extubated (using laryngeal tube) in the operating room as they awakened from anesthesia?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. ...transferred to the recovery area while still anesthetized and intubated with laryngeal mask, and allowed to wake up in recovery area?    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

## MODULE G: Anesthetic Gases

7/23/10

41. Has air monitoring for anesthetic gases been conducted on a continuous or periodic basis in the **operating room** to detect anesthetic gas leaks?
- Yes  
 No  
 I don't know
42. Has exposure monitoring (using badges or other air sampling devices) been conducted in the **past 12 months** to assess your exposure or your co-workers' exposure to anesthetic gases?
- Yes  
 No  
 I don't know
43. During the past 7 calendar days, what was the average amount of time you spent **each work day** with patients in recovery area(s)?
- No time spent in patient recovery area(s)  
➔ GO TO CORE MODULE IF THIS IS THE FIRST HAZARD MODULE COMPLETED. IF THIS IS THE SECOND HAZARD MODULE COMPLETED, END SURVEY. END WITH 'THANK YOU' STATEMENT.  
 Less than 1 hour  
 1 hour or more
44. Was the patient recovery area where you spent the most time during the past 7 calendar days adequately ventilated?
- Yes  
 No  
 I don't know  
ALL RESPONSES: ➔ GO TO CORE MODULE IF THIS IS THE FIRST HAZARD MODULE COMPLETED. IF THIS IS THE SECOND HAZARD MODULE COMPLETED, END SURVEY. END WITH 'THANK YOU' STATEMENT.

**Thank you for participating in the NIOSH Health and Safety Practices Survey of Healthcare Workers. Your answers have been submitted.**