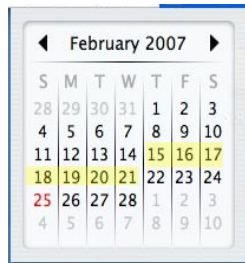


PROGRAMMING INSTRUCTIONS APPEAR IN BLUE.

INTRO QUESTIONS

- A. Did you sterilize medical instruments or supplies using **ETHYLENE OXIDE** (EtO in the past 7 calendar days)?
 - Yes ➔ **SUBMODULE 1**
 - No

DISPLAY CALENDAR HIGHLIGHTING THE PAST 7 CALENDAR DAYS. (APPLIES TO ALL QUESTIONS WITH 'IN THE PAST 7 CALENDAR DAYS'.



- B. Did you sterilize medical instruments or supplies using **HYDROGEN PEROXIDE GAS PLASMA** in the past 7 calendar days?
 - Yes ➔ **SUBMODULE 2**
 - No

QUESTION C IS TO BE COMPLETED BEFORE DISPLAYING SUBMODULES

- C. From which organization(s) have you achieved professional certification for sterile processing of medical instruments or supplies?

Please ✓ all that apply.

 - International Association of Healthcare Central Service Materiel Management (IAHCSMM)
 - Certification Board for Sterile Processing and Distribution (CBSPD)
 - Other (Please specify):
 - _____
I have not yet achieved professional certification

Public reporting burden of this collection of information is estimated to average 11 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 D: Chemical Sterilants

7/23/10

IF RESPONDENT MARKED 'YES' TO INTRO QUESTIONS A AND B, RANDOMIZE ORDER
SUBMODULES ARE PRESENTED.

IF RESPONDENT MARKED 'YES' TO ONLY ONE OF THESE TWO QUESTIONS ➔ GO TO
APPROPRIATE SUBMODULE.

MODULE D: Chemical Sterilants

7/23/10

SUBMODULE 1. ETHYLENE OXIDE (EtO)

1. During your career, how long have you been chemically sterilizing medical instruments or supplies using EtO?
 - Less than one year
 - 1-5 years
 - 6-10 years
 - 11-20 years
 - More than 20 years

 2. When was the last time you received training on the safe handling of ethylene oxide EtO?
 - Within the past 12 months
 - More than 12 months ago
 - I never received training

 3. Are you familiar with the OSHA guidelines for workplace exposure to EtO?
 - Yes
 - No
-

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 employer have standard procedures for sterilizing with EtO?
 - Yes
 - No
 - I don't know

5. During the past 7 calendar days, in which of the following work settings did you sterilize medical instruments or supplies using EtO?
Please ✓ all that apply.
 - Hospital central supply/processing and distribution area
 - Other hospital area
 - Outpatient care center
 - Physician's office
 - Dental office, clinic or lab
 - Facility that provides sterilized supplies to healthcare providers
 - Other location (Please specify):

IF ONLY ONE WORK SETTING MARKED IN QUESTION 5 ➔ GO TO QUESTION 7.

6. Of the locations you checked, please indicate the work setting where you **most often** sterilized medical instruments or supplies using EtO during the past 7 calendar days.

LIST WORK SETTINGS MARKED IN QUESTION 5 (USE RADIO BUTTONS).

MODULE D: Chemical Sterilants

7/23/10

7. During the past 7 calendar days, on how many days did you sterilize medical instruments or supplies with a sterilizer using EtO?
- 1 day
 - 2 days
 - 3 days
 - 4 days
 - 5 days
 - 6 days
 - 7 days
8. During the past 7 calendar days, did you sterilize medical instruments or supplies with an EtO sterilizer that uses compressed-gas cylinders (EtO mixtures) or single-use cartridges of EtO?
- Yes
 - No ➔ [GO TO QUESTION 22](#)

EtO Sterilizer with IN-CHAMBER Aeration

9. During the past 7 calendar days, did you sterilize medical instruments or supplies using an EtO sterilizer **with in-chamber aeration** (i.e., load does **not** need to be transferred after sterilization to a separate aerator)?
- Yes
 - No ➔ [GO TO QUESTION 15](#)
 - Not applicable ➔ [GO TO QUESTION 15](#)

Note: Check “Not applicable” if your workplace does not have this type of EtO sterilizer.

10. During the past 7 calendar days, what was the total number of loads you processed using an EtO sterilizer **with in-chamber aeration**?
- 1 load
 - 2-3 loads
 - 4-5 loads
 - 6-10 loads
 - More than 10 loads
11. During the past 7 calendar days, the total number of loads you processed using an EtO sterilizer **with in-chamber aeration** was...
- More than usual
 - Fewer than usual
 - About the same as usual

MODULE D: Chemical Sterilants

7/23/10

12. What was the source of EtO gas for the sterilizer **with in-chamber aeration** you used most often during the past 7 calendar days?
- Gas cylinder(s)
- Single-use cartridge (requires cartridge to be inside sterilizer with door closed before it is punctured) ➔ [GO TO QUESTION 14; SKIP QUESTIONS 28 THROUGH 37](#)
13. Which best describes the location of the EtO supply gas cylinder for the sterilizer **with in-chamber aeration** you used most often during the past 7 calendar days?
- Gas cylinder(s) located in a **different room** than the sterilizer.
- Gas cylinder(s) located in the **same room** as the sterilizer.
14. Considering the EtO sterilizer with **in-chamber aeration** you used most often during the past 7 calendar days...

	Yes	No	I don't know
a. ...was operational local exhaust ventilation provided above the door of the sterilizer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. ...was there a continuous monitor located near the sterilizer that provides a warning when EtO leaks occur?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

EtO Sterilizer with SEPARATE Aeration Chamber

15. During the past 7 calendar days, did you use an EtO sterilizer with a **separate** aeration chamber (i.e., load **needs** to be transferred after sterilization to a separate aerator)?
- Yes
- No ➔ [GO TO QUESTION 22](#)
- Not applicable ➔ [GO TO QUESTION 22](#)

Note: Check "Not applicable" if your workplace does not have this type of EtO sterilizer.

16. During the past 7 calendar days, how much time did you typically spend transferring a single load from a sterilizer to the aeration chamber?
- Less than 1 minute
- 1-2 minutes
- 3-4 minutes
- 5-6 minutes
- More than 6 minutes

Note: Include only the time spent transferring the load from the sterilizer to the aeration chamber.

MODULE D: Chemical Sterilants

7/23/10

17. During the past 7 calendar days, what was the total number of loads transferred from the sterilizer to the aeration chamber?
- 1 load
 - 2-3 loads
 - 4-5 loads
 - 6-10 loads
 - More than 10 loads
18. During the past 7 calendar days, the total number of loads you transferred from the sterilizer to the aeration chamber was...
- More loads than usual
 - Fewer loads than usual
 - About the same number of loads as usual
19. What was the source of EtO gas for the sterilizer **with separate aeration chamber** you used most often during the past 7 calendar days?
- Gas cylinder(s)
 - Single-use cartridge (requires cartridge to be inside sterilizer with door closed before it is punctured) ➔ [GO TO QUESTION 21; SKIP QUESTIONS 28 TO 37](#)
20. Which best describes the location of the EtO supply gas cylinder or container for the sterilizer **with a separate aeration chamber** you used most often during the past 7 calendar days?
- Gas cylinder(s) located in a **different room** than the sterilizer.
 - Gas cylinder(s) located in the **same room** as the sterilizer.
21. Considering the sterilizer with a **separate aeration chamber** that you used most often during the past 7 calendar days.....
- | | Yes | No | I don't know |
|---|-----------------------|-----------------------|-----------------------|
| a. Was operational local exhaust ventilation provided above the door of the sterilizer? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. Was there a continuous monitor located near the sterilizer that provides a warning when EtO leaks occur? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
-

MODULE D: Chemical Sterilants

7/23/10

EtO Sterilizer System Using Glass Ampoules of Liquid EtO

22. During the past 7 calendar days, did you sterilize medical instruments or supplies with a **sterilizer system that uses glass ampoules containing liquid ethylene oxide** (e.g., *Anprolene*®)?

- Yes
 No ➔ [GO TO QUESTION 31](#)
 Not applicable ➔ [GO TO QUESTION 31](#)

Note: Check “Not applicable” if your workplace does not have this type of ethylene oxide sterilizer.

23. During the past 7 calendar days, what was the total number of loads you processed with this type of sterilizer system?

- 1 load
 2-3 loads
 4-5 loads
 6-10 loads
 More than 10 loads

24. During the past 7 calendar days, the total number of loads you transferred from the sterilizer to the aeration chamber was...

- ...more loads than usual
 ...fewer loads than usual
 ...about the same number of loads as usual

25. How often do you place the sealed plastic bag(s) in the sterilizer after breaking the glass ampoule?

- Always
 Sometimes
 Never

26. Was the sterilizer system that uses glass ampoules containing liquid EtO connected to an exhaust source?

- Yes
 No
 I don't know

27. Was there a continuous monitor located near this sterilizer system that provides a warning when EtO leaks occur?

- Yes
 No
 I don't know

Questions addressing work practices and use of personal protective equipment (PPE) will help us understand what is currently used around EtO sterilizer systems and under what circumstances. Depending on your job and exposures, PPE may not be required.

MODULE D: Chemical Sterilants

7/23/10

IF RESPONDENT MARKED 'SINGLE-USE CARTRIDGE' IN QUESTION 12 OR QUESTION 19, SKIP QUESTIONS 28-37. IF RESPONDENT MARKED 'GAS CYLINDER(S)' IN QUESTION 12 OR QUESTION 19, SKIP QUESTIONS 28-30.

28. During the past 7 calendar days, how often did you wear **protective gloves** while sterilizing medical instruments with this type of sterilizer system?
- Always ➔ GO TO QUESTION 31
 Sometimes
 Never
29. What were the reasons(s) you did not always wear **protective gloves** while sterilizing medical instruments or supplies with this type of sterilizer system?
- Please ✓ all that apply.**
- Skin exposure was minimal
 Not part of our protocol
 Not provided by employer
 No one else who does this work uses them
 Too uncomfortable or difficult to use
 Not readily available in work area
 Other (Please specify): _____

IF RESPONDENT MARKED ONLY ONE REASON IN QUESTION 29 AND 'NEVER' IN QUESTION 28 ➔ GO TO QUESTION 31.

IF RESPONDENT MARKED ONLY ONE REASON IN QUESTION 29 AND MARKED 'SOMETIMES' IN QUESTION 28 ➔ GO TO QUESTION 31.

30. Of the reasons you checked above, please indicate the **most important reason** you did not always wear **protective gloves** while sterilizing medical instruments or supplies with this type of sterilizer system.
- LIST REASONS MARKED IN QUESTION 29 (USE RADIO BUTTONS)**
31. During the past 7 calendar days, did you wear any of the following **while using an EtO sterilizer**?

Please ✓ all that apply.

- Half-facepiece air purifying respirator with chemical cartridge(s)



- Full-facepiece air purifying respirator with chemical cartridge(s)



- Full-facepiece supplied air respirator

- Standard surgical mask



MODULE D: Chemical Sterilants

7/23/10



None of above

I don't know

DISPLAY FOLLOWING NOTE ON A SEPARATE SCREEN (EXCEPT THOSE WHO MARKED 'I DON'T KNOW'): THE FOLLOWING QUESTIONS ASK ABOUT RESPIRATORS. STANDARD SURGICAL MASKS ARE NOT RESPIRATORS.

IF RESPONDENT MARKED 'HALF-FACEPIECE AIR PURIFYING RESPIRATOR', 'FULL-FACEPIECE AIR PURIFYING RESPIRATOR' OR 'FULL-FACEPIECE SUPPLIED AIR RESPIRATOR' IN QUESTION 31 → GO TO QUESTION 32

IF RESPONDENT MARKED ONLY 'STANDARD SURGICAL MASK' OR 'NONE OF THE ABOVE' IN QUESTION 31 → GO TO QUESTION 33

IF RESPONDENT MARKED 'I DON'T KNOW' IN QUESTION 31 → GO TO QUESTION 36

32. How often did you wear a half- or full – facepiece air purifying respirator with chemical cartridge(s) or a full-facepiece supplied air respirator while using an EtO sterilizer?

- Always → GO TO QUESTION 35
 Sometimes

33. What were the reason(s) you did not **always** wear a half-facepiece air purifying respirator with chemical cartridge(s), a full-facepiece air purifying respirator with chemical cartridge(s), or a full-facepiece supplied air respirator while using an EtO sterilizer?

Please ✓ all that apply.

- An engineering control (e.g., ventilated enclosure/ chamber) was being used
 Exposure was minimal
 Not part of our protocol
 Not provided by employer
 No one else who does this work uses them
 Too uncomfortable or difficult to use
 Not readily available in work area
 Other (Please specify):
-

MODULE D: Chemical Sterilants

7/23/10

IF R MARKED MORE THAN ONE REASON IN QUESTION 33 ➔ GO TO QUESTION 34.
OTHERWISE ➔ GO TO INSTRUCTIONS BEFORE QUESTION 35.

34. Of the reasons you checked above, please indicate the **most important reason** you did not **always** wear a **respirator** while using an EtO sterilizer.

LIST REASONS MARKED IN QUESTION 33 (USE RADIO BUTTONS)

IF RESPONDENT MARKED “HALF-FACEPIECE AIR PURIFYING RESPIRATOR” OR “FULL-FACEPIECE AIR PURIFYING RESPIRATOR” IN QUESTION 31 ➔ GO TO QUESTION 35.
IF RESPONDENT MARKED “FULL-FACEPIECE SUPPLIED AIR RESPIRATOR” IN QUESTION 31 ➔ GO TO QUESTION 36.
OTHERWISE ➔ GO TO QUESTION 36.

35. Have you been fit-tested by an occupational health and safety specialist for the respirator(s) you use for EtO sterilization?

Yes
 No

36. Has exposure monitoring (using badges or other sampling devices) been conducted in the **past 12 months** to assess your or your co-workers' exposure to EtO?

Yes
 No
 I don't know

37. A **medical surveillance program** may include work history, physical exam, blood and/or urine tests, etc. Do you participate in a medical surveillance program that addresses potential health effects of exposure to EtO?

Yes
 No, my (primary) employer offers such a program but I did not participate in it.
 My (primary) employer does not provide/I am not aware that my employer provides such a program.

ALL RESPONSES ➔ IF RESPONDENT MARKED 'YES' TO QUESTION B ➔ GO TO SUBMODULE 2. OTHERWISE, EXIT MODULE AND 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.

SUBMODULE 2: Hydrogen Peroxide Gas Plasma

MODULE D: Chemical Sterilants

7/23/10

38. During your career, how long have you been chemically sterilizing medical instruments or supplies using hydrogen peroxide gas plasma?
- Less than one year
 - 1-5 years
 - 6-10 years
 - 11-20 years
 - More than 20 years
39. When was the last time you received training on the safe handling of hydrogen peroxide gas plasma?
- 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.

40. Does your employer have standard procedures for sterilizing with hydrogen peroxide gas plasma?
- Yes
 - No
41. During the past 7 calendar days, in which of the following work settings did you sterilize medical instruments or supplies using hydrogen peroxide gas plasma?
- Please ✓ all that apply.**
- Hospital central supply/ processing and distribution area
 - Other hospital area
 - Outpatient care center
 - Physician's office
 - Dental office, clinic or lab
 - Facility that provides sterilized supplies to healthcare providers
 - Other location (Please specify):
-

IF ONLY ONE WORK SETTING MARKED IN QUESTION 41 ➔ GO TO QUESTION 43.

42. Of the locations you checked above, please indicate the work setting where you **most often** used hydrogen peroxide gas plasma during the past 7 calendar days.
- LIST LOCATIONS MARKED IN QUESTION 41 (USE RADIO BUTTONS)**

MODULE D: Chemical Sterilants

7/23/10

43. During the past 7 calendar days, on how many days did you sterilize medical instruments or supplies with a sterilizer using hydrogen peroxide gas plasma?
- 1 day
 - 2 days
 - 3 days
 - 4 days
 - 5 days
 - 6 days
 - 7 days
44. During the past 7 calendar days, what was the total number of loads you sterilized using hydrogen peroxide gas plasma?
- Fewer than 11 loads
 - 11-20 loads
 - 21-50 loads
 - 51-100 loads
 - More than 100 loads
45. During the past 7 calendar days, the total number of loads you transferred from the sterilizer to the aeration chamber was...
- ...more loads than usual
 - ...fewer loads than usual
 - ...about the same number of loads as usual

ALL RESPONSES ➔ IF RESPONDENT MARKED 'YES' TO QUESTION A ➔ GO TO SUBMODULE 1. OTHERWISE, EXIT MODULE AND 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.