

**Testing of the Respiratory Health of Health Care Workers Survey: Results of Interviews Conducted January-March 2012**

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**Introduction**

This report summarizes the findings from a research project designed to evaluate Respiratory Health of Healthcare Workers Questionnaire for the National Institute of Occupational Safety and Health (NIOSH). The Respiratory Health of Healthcare Workers Questionnaire is part of a new study commissioned by NIOSH to identify modifiable occupational risk factors for asthma in healthcare that will inform strategies for prevention. This evaluation is based on 24 cognitive interviews that were conducted by the Questionnaire Design Research Laboratory (QDRL) at the National Center for Health Statistics (NCHS). Cognitive interviewing is a qualitative question evaluation method used to evaluate the validity of survey questions (Willis 2005; Miller 2011). The main goals of the project were to: 1) assess respondents' interpretation of the survey questions and 2) identify any potential question response problems that could lead to response error in the survey data. The following report summarizes the cognitive interviewing methodology and describes how data analysis was conducted. An overview of the findings is then presented, followed by a question by question review of the findings.

**Methodology**

*Sample*

In order to participate in the evaluation respondents had to be employed as a registered nurse (RN), licensed practical nurse (LPN), licensed vocational nurse (LVN), respiratory therapist, respiratory technician, respiratory technologist, nursing aide, housekeeper or janitor and be working at a hospital or nursing home. Respondents were recruited through a newspaper advertisement and through word of mouth. Twenty-four respondents were recruited for the study. Three of the respondents who screened into the study were determined to be ineligible during the interview, as they were not currently employed in a hospital or nursing home. These cases were not included in the analysis of many of the questions pertaining to current work and past work environments as noted in the question by question review.

**Table 1. Demographic Summary of Respondents (n=24)**

	Total	Percent
<b>Age</b>		
20-29	2	8%
30-39	2	8%
40-49	9	38%
50-59	7	29%
60-69	3	13%
Refused	1	4%

<b>Gender</b>		
Male	6	25%
Female	18	75%
<b>Race/Ethnicity</b>		
NH-White	1	4%
NH-Black	22	92%
Other Race	1	4%
<b>Education</b>		
High School	7	29%
Some College	11	46%
Bachelor's Degree	4	17%
Master's Degree	2	8%

### *Interviewing Procedures*

We evaluated this questionnaire using cognitive interviewing. During the interviews respondents were given a paper version of the questionnaire and asked to complete it on their own. A copy of the instrument used during testing can be found in the appendix. After completing the first three interviews, a typo was found in question 22.2, which asked “What tasks do you perform when you apply or use chemicals, adhesives, alcohols, or solvents on patients? Please indicate if you perform the tasks listed in the first column of the following table. *IF YOU ANSWER ‘YES’ FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you clean or disinfect surfaces, and the type of gloves used.*” The question was edited to read, “What tasks do you perform when you apply or use chemicals, adhesives, alcohols, or solvents on patients? Please indicate if you perform the tasks listed in the first column of the following table. *IF YOU ANSWER ‘YES’ FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you use chemicals, adhesives, alcohols or solvents at work on patients?*” Once respondents completed the questionnaire, interviews began probing on their response process. Probe questions included such things as: Why did you answer that way? How did you arrive at your response? Can you tell me more about that? Can you clarify what you mean? The interviews were video recorded; video recordings and interview summaries were used to conduct data analysis. Interviews typically lasted 60 minutes and respondents were remunerated \$50 for their time.

### *Data Analysis*

Data from this evaluation were analyzed using the constant comparative method of analysis (Lincoln and Guba, 1985; Strauss and Corbin, 1990; Creswell, 1998). The constant comparative method involves a constant comparison of data findings to the original data. This typically involves three steps of data reduction (Strauss and Corbin 1990). First, we performed open coding. This entailed reviewing the data with two questions in mind: 1) how did respondents interpret this question and 2) why did respondents select the response they did? During this analysis step a number of codes were assigned to the interview notes for each respondent. In the next step of data analysis, called axial coding, analysts refined the themes/categories that emerged from open coding. Analysts identified the dimensionality of categories (i.e., range of properties that fall under a particular category), as well as potential conflicts between items placed under the same category. In the final analytic step, referred to as selective coding, analysts specified the core themes that emerged from the analysis. These core themes served as the unifying link between all themes/categories, and denoted a working theory that depicts the phenomena captured by this question.

### **Overall findings**

A number of common problems emerged during the evaluation of these questions that have implications for the validity of the data collected using these measures. The first problem that we observed was that respondents misinterpreted questions designed to capture cleaning that takes place in a central supply or central sterilization unit of hospitals. Questions in the *Exposure to Disinfectant & Sterilant Products Used on Equipment and Instruments* section, and question 30 in the *Employment Five Years Ago* section were designed to elicit information on use of sterilants used in central supply or central sterilization units. However, many respondents misinterpreted these questions as asking about cleaning surfaces and cleaning medical equipment and instruments with lower grade cleaning products such as alcohol wipes outside of central supply location. As a result, many respondents incorrectly reported using these products at work.

Another common problem that emerged during the testing was respondents often had difficulty recalling the brand names and sometimes the generic names of the cleaning products they used at work. This occurred throughout the questionnaire in questions where respondents were asked the name of products used at work and the duration of use (i.e., questions 19.1, 20.1, 21.1, 22.1, 23.1). When this occurred, respondents provided partial information or skipped these questions altogether.

In addition to the problems mentioned above, respondents also had difficulty calculating how often they performed tasks at work. Throughout the questionnaire respondents are asked to report on how often they perform different tasks such as using disinfectants and sterilants on medical equipment and instruments, disinfectants and cleaners on surfaces, clean and wax floors, and use chemicals/adhesives/alcohol/solvents on patients. Respondents found it difficult to calculate how many hours a day and days a week they spend performing these tasks. For some of these tasks it was easier to think about how often they perform these tasks per day than to think about how many hours they spend performing them. However, the biggest challenge to calculating how often they performed these tasks was the fact that the amount of time spent performing these tasks could vary day to day depending on how many patients were treated and how many staff members were available.

Finally, respondents had difficulty filtering themselves into the appropriate questions. Often this was because they overlooked or had difficulty following the complex skip patterns found throughout the instrument. This resulted in respondents skipping questions they should have answered or answering questions they should not have answered. Other times respondents chose to skip over questions due to comprehension issues. Additionally, respondents often did not fill out matrices completely. Typically this was because respondents simply overlooked items when filling out the instrument.

The problems cited above can be resolved by editing questions to clarify question intent. Additionally, reordering the sections of the instrument may also improve comprehension. For example, placing the section on *Exposure to Cleaning & Disinfectant Products Used on Fixed Surfaces* before the section on *Exposure to Disinfectant & Sterilant Products Used on Equipment and Instruments* will allow respondents to first report on cleaning surfaces and then cue them into the fact that the latter section is asking about higher level cleaning in a central supply unit. Finally, the problem with skip patterns should be resolved in the move to a web survey, as the computer program will automatically advance respondents to the correct questions. Administering the survey on the web may also allow for checks of validity. For example, designers can program the software to check for responses that are out of range of possible responses. Additionally, the software can prompt respondents to answer questions that they have inappropriately skipped.

## Question by Question Findings

1 Have you **ever** had any of the following medical conditions?

- |   |        |         |
|---|--------|---------|
| 1.1 Chronic obstructive pulmonary disease, or COPD                                      | ___ No | ___ Yes |
| 1.2 Emphysema   | ___ No | ___ Yes |
| 1.3 Nasal or sinus allergies, including hay fever                                       | ___ No | ___ Yes |
| 1.4 Eczema or any kind of skin allergy  | ___ No | ___ Yes |
| 1.5 Allergies to animals  | ___ No | ___ Yes |
| 1.6 Allergies to dust or dust mites   | ___ No | ___ Yes |
| 1.7 Allergies to latex or latex-containing products (ace bandages/adhesive tape/gloves) | ___ No | ___ Yes |

### *1.1 Chronic obstructive pulmonary disease, or COPD*

Twenty-three respondents answered “no” and one respondent answered “yes” to question 1.1. Respondents were not probed on this question due to time constraints.

### *1.2 Emphysema*

All twenty-four respondents answered “no” to question 1.2. Respondents were not probed on this question due to time constraints.

### *1.3 Nasal or sinus allergies, including hay fever*

Twelve respondents answered “yes” and twelve respondents answered “no” to question 1.3. One respondent who answered “yes” to this question was probed on her response and she stated that she is currently experiencing allergy symptoms. She described having congestion and pressure in her nasal cavities and a headache. One respondent who answered “no” to this question was probed on his response and he indicated that he never has persistent allergy symptoms. He may experience a cough or a stuffy nose when in a new environment or in the summertime, but never to the point where he takes medication to treat his symptoms. Therefore he answered “no.”

### *1.4 Eczema or any kind of skin allergy*

Twenty respondents answered “no” and four respondents answered “yes” to question 1.4. Two respondents, who answered “no” to this question, were probed. One of these respondents indicated that she was unsure of the meaning of the word “eczema.” She thought eczema was a type of skin problem but was not sure. She indicated that she has never had any skin problems or conditions, so she answered “no.” The other respondent who was probed on this question also indicated that he has never had any skin conditions. The only time this respondent’s skin is ever irritated is when he works with insulation, which makes his skin itchy. However, this itch stops once he has washed his skin.

### *1.5 Allergies to animals*

Twenty-one respondents answered “no” and three respondents answered “yes” to question 1.5. Three respondents were probed on this question. Two respondents, who answered “no”, indicated that they never experience allergy symptoms when they are around animals. One respondent who answered “yes” indicated that she is very allergic to cats but not to dogs.

### 1.6 Allergies to dust or dust mites

Eighteen respondents answered “no” and six respondents answered “yes” to question 1.6. Only one respondent was probed on her response to this question. This respondent indicated that she has never been tested for allergies in the past. However she believes she used to be allergic to dust because she used to sneeze whenever she was around it. She answered “no” to this question because she no longer experiences these symptoms.

### 1.7 Allergies to latex or latex-containing products (ace bandages/adhesive tape/gloves)

All twenty-four respondents answered “no” to question 1.7. Two respondents were probed on this question. Both respondents indicated that they wear latex gloves at work and have never experienced any allergic reactions to latex.

2 Has your **biological mother** had the following medical conditions?

- 2.1 Asthma?  No  Yes  Don't Know  
2.2 Hay fever, eczema, or skin allergies?  No  Yes  Don't Know

#### 2.1 Asthma

Nineteen respondents answered “no,” three respondents answered “yes” and two respondents answered “don’t know” to question 2.1. Four respondents were probed on this question. All four of these respondents answered “no” and indicated that their mother never had asthma or any kind of breathing problem.

#### 2.2 Hay fever, eczema, or skin allergies

Seventeen respondents answered “no,” five respondents answered “no,” and two respondents answered “don’t know” to question 2.2. Four respondents were probed on this response. All four of these respondents answered “no” and indicated that their mother never had any type of allergy or skin problems.

3 Has your **biological father** had the following medical conditions?

- 3.1 Asthma?  No  Yes  Don't Know  
3.2 Hay fever, eczema, or skin allergies?  No  Yes  Don't Know

#### 3.1 Asthma

Seventeen respondents answered “no,” two respondents answered “yes,” and five respondents answered “don’t know” to question 3.1. Five respondents were probed on this question. All five of these respondents answered “no” and indicated that their father never had asthma. One respondent did indicate that her father was a smoker and had respiratory problems. She said he would wheeze and have shortness of breath, and he eventually developed lung cancer. However, his respiratory problems occurred when she was younger and she had difficulty recalling the cause of his wheezing and shortness of breath. Therefore she was not 100% sure of her response to this question. Another respondent also indicated that she was not 100% sure that her father does not have asthma. She never lived with her father and therefore does not have knowledge of his health status. When answering question 3.2 she indicated that she did not know if he has hay fever, eczema or skin allergies. When probed on why she did not

answer “don’t know” to this question, she then stated that she was “pretty sure” that he did not have asthma.

### 3.2 Hay fever, eczema, or skin allergies?

Thirteen respondents answered “no,” three respondents answered “yes,” and eight respondents answered “don’t know” to question 3.2. Five respondents were probed on this question. Three respondents, who answered “no,” indicated that their father never had any type of allergy or skin condition. Two respondents who answered “don’t know” were also probed on their response. One respondent checked “don’t know” as she was unsure whether or not her father ever had allergies. She never lived with her father and does not have knowledge of his health status. She thought if he did have allergies, his symptoms were never bad enough that she knew about it. The other respondent, who answered “don’t know” to this question, initially checked “yes” and then changed her answer to “don’t know.” When I probed on this she indicated that she was not sure of the meaning of “eczema.” She asked, “Does that have something to do with the skin?” When she first read the word “eczema” she confused it with emphysema and checked “yes” as she thought her father had emphysema. She then realized she was confusing these terms but was still unsure of the meaning of eczema. Therefore she answered “don’t know.”

4 In the last **12 months**, have you observed any of the following in your house or apartment?

4.1 Water leakage or water damage indoors on walls, floors, or ceilings? \_\_\_No \_\_\_Yes

4.2 Visible mold growth (not on food) indoors on walls, floors, or ceilings? \_\_\_No \_\_\_Yes

4.3 Odor of mold or mildew (not from food)? \_\_\_No \_\_\_Yes

#### 4.1 Water leakage or water damage indoors on walls, floors, or ceilings?

Fourteen respondents answered “no” and ten respondents answered “yes” to question 4.1. Three respondents were probed on this question. Two of these respondents answered “yes” to this question and indicated that they have seen water leaking into their homes. One respondent indicated that water gathers in the track on her sliding glass doors when it rains. The other respondent indicated that a window in the basement of his rooming house leaks when it rains. The rain water will leak from the window to the floor. Another respondent who answered “no” to this question indicated that he has never seen any water leaking into his apartment or any stains from previous leaks. This respondent works as maintenance man at an apartment complex and indicated that he would either fix a leak or alert maintenance to the problem if it occurred in his apartment building.

#### 4.2 Visible mold growth (not on food) indoors on walls, floors, or ceilings?

#### 4.3 Odor of mold or mildew (not from food)?

Twenty-three respondents answered “no” and one respondent answered “yes” to questions 4.2 (Visible mold growth (not on food) indoors on walls, floors, or ceilings) and 4.3 (Odor of mold or mildew (not from food)). Three respondents were probed on this question. One respondent who answered “yes” indicated that mold has developed on the interior wall of his basement from water leaking through a window. He described the mold as gray to black in color and having a strong odor. Although he scrubs the mold with bleach and a brush whenever it appears, it always returns after it rains. Two respondents who answered “no” indicated that they have never seen or smelled mold in their apartment.

5 In the last **12 months**, have there been any renovations or construction in your house or apartment?

\_\_\_ No \_\_\_ Yes

Sixteen respondents answered “no,” seven respondents answered “yes” to this question. One respondent left this question blank. Four respondents were probed on this question. All four of these respondents answered “no” to this question. One respondent indicated that the building he has lived in for the past year was newly constructed and there has been no additional construction or renovation done since he moved in. Two other respondents also indicated that there has been no construction or renovations done to their building. However, one respondent indicated that there was construction done in the building next to him, and he also painted his bathroom recently. Another respondent who answered “no” to this question was not sure whether renovations or construction occurred in her building. She indicated that she moved into her apartment a month prior to the interview and she knew they “did some things” to the apartment before she moved in. However, she didn’t elaborate on what these things were. Finally, the respondent who left this question blank was not probed on this question.

6 In the last **12 months**, how often have you personally cleaned your own home?

Never	Less than 1 day / week	1-3 days / week	4-7 days / week
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

One respondent answered “never,” one respondent answered “less than 1 day/week,” thirteen respondents answered “1-3 days/week,” and nine respondents answered “4-7 days/week.” One respondent had difficulty comprehending the response options used in this question. While completing the survey this respondent stopped at this question and stated, “Okay. This says less than one day per week. Is that saying every day of the week or...?” She then reread the question and indicated to the interviewer that she understood. While the interviewer did not probe further on this, it’s clear that the category “less than 1 day/week” was confusing for this respondent. Three other respondents were probed on this question. One respondent, one answered “1-3 days/week,” indicated during probing that he cleans the rooming house where he lives in exchange for rent. This includes vacuuming, dusting, and cleaning the bathrooms and kitchen. He indicated that he always cleans on Mondays, Wednesday, and Fridays. Two respondents who answered “4-7 days/week” indicated that they like to keep their homes very clean. One respondent even described himself as a “clean freak.” This respondent indicated that he cleans his bathroom and kitchen every night before he goes in bed. This includes cleaning surfaces such as the sinks and vacuuming and washing the floors. The other respondent who answered “4-7 days/week” also indicated that he regularly cleans his kitchen and bathroom, and he vacuums his apartment twice a day.

7 In the last **12 months**, on how many days a week have you used the following cleaning products in your own home? *Mark the single best answer for each cleaning product.*

	Never	Less than 1 day / week	1-3 days / week	4-7 days / week
7.1 Bleach (Clorox®)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2 Ammonia (Windex®), Mr. Clean	___	___	___	___

Top Job<sup>®</sup>)

7.3 Any spray cleaning product





### 7.1 Bleach (Clorox)

One respondent skipped out of questions 7.1-7.3 as he answered “never” to question 6. Twenty-three respondents received question 7.1. One respondent answered “never,” five respondents answered “less than 1 day/week,” eleven respondents answered “1-3 days/week,” and four respondents answered “4-7 days/week” to question 7.1. One respondent selected both “less than 1 day/week” and “4-7 days/week” and another respondent did not provide a response to this question. The respondent who selected both “less than 1 day/week” and “4-7 days/week” also did not provide a response to question 7.2 and 7.3. However, this was not probed on due to time constraints. The other respondent who did not provide a response to this question was probed on why she did not select a response. She indicated that she missed this question when filling out the survey, however she did answer questions 7.2 but not 7.3. She then marked “4-7 days/week” as she uses bleach mixed with water to clean her bathtub, sink and toilet. She said she does this often because she likes a clean house. One other respondent was probed on this question. This respondent answered “1-3 days a week” as he uses bleach to clean the sink, toilet, shower, and tile walls in the bathroom once a week.

### 7.2 Ammonia (Windex<sup>®</sup>, Mr. Clean Top Job<sup>®</sup>)

Twenty-three respondents received question 7.2. Two respondents answered “never,” five respondents answered “less than 1 day/week,” nine respondents answered “1-3 days/week,” and four respondents answered “4-7 days/week” to question 7.2. Three respondents left this question blank. One of these respondents indicated that she skipped this question by accident; however she did answer questions 7.1 and 7.3. This respondent indicated during probing that she never uses ammonia to clean as she doesn’t like the smell of it. The other respondents who left this question blank were not probed on this question. This same respondent answered question 7.1 but not 7.3. It’s not clear if these respondents are skipping this question due to a comprehension problem, a design effect or some other reason. Two respondents were probed on their response to this question. One respondent, who answered that he uses ammonia less than 1 day/week, later reported during probing that he never uses ammonia because he doesn’t like it. When asked about this discrepancy he first said he made a mistake and changed her response to never. He then realized that he marked less than 1 day/week because he uses Windex, Top Job or Mr. Clean. Interestingly he didn’t think of these products as ammonia. However, he uses Windex once a week to clean mirrors in his home, and will use Top Job or Mr. Clean to clean his bathroom surfaces if he is out of Clorox. Similarly, another respondent, who answered “1-3 days/week,” indicated during probing that she doesn’t like ammonia, but he uses Windex and Mr. Clean in his home. These findings suggest that the examples provided in the question are aiding comprehension.

### 7.3 Any spray cleaning product

Twenty-three respondents received question 7.3. Four respondents answered “less than 1 day/week,” twelve respondents answered “1-3 days/week,” and five respondents answered “4-7 days/week.” Two respondents left this question blank. One of these respondents also left question 7.1 blank. When probed on this she indicated that she simply missed this question when answering. She then answered “4-7 days/week” and indicated that she was thinking of Febreze



when answering, and she uses this product throughout her home on a regular basis. Another respondent who left this question blank was not probed on this question; however this respondent did answer questions 7.1 and 7.2. Finally, the third respondent who left this question blank did so because he was confused by the term “any spray cleaning product.” While filling out the survey he stopped at this question and asked if this question was referring to a different type of spray cleaning product than those asked about in questions 7.1 and 7.2. In other words this question was redundant for him as he uses bleach and ammonia in a spray form, and he reported on his use of these products in question 7.1 and 7.2. Therefore he didn’t know if he should report on the use of these products again in this question or answer “never,” so he did not provide a response. Finally, one respondent who answered “1-3 days/week” was probed on his response to this question. This respondent indicated that he uses an antibacterial spray to clean the kitchen counters and another type of spray cleaner on his stainless steel surfaces.

8 In the last **12 months**, on how many days a week have you used air freshening sprays (like Febreze® or Glade®)?

Never	Less than 1 day / week	1-3 days / week	4-7 days / week
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Twenty-three respondents received this question. Two respondents answered “never,” two answered “less than 1 day/week,” nine answered “1-3 days/week,” and ten answered “4-7 days/week.” Two respondents were probed on this question. One respondent, who answered “4-7 days/week,” indicated that he uses an air freshening spray every day in the bathroom to freshen the air. Another respondent, who answered “4-7 days/week,” indicated during probing that she was thinking of Febreze when answering and she uses this product almost every day in her home to freshen the air.

9 Were you **ever** involved in an accidental chemical spill or gas release?

\_\_\_ No \_\_\_ Yes

Twenty-four respondents received this question. All but two respondents answered “no” to this question. One respondent was unsure of the intent of this question. While completing the survey she stopped and asked if this question was asking about gas releases near one’s home as opposed to in one’s home. She discussed an event that occurred many years ago where she smelled a gas leak in her neighborhood and notified the gas company. About a week later there was an explosion from gas leaking in a home in her neighborhood. She was not sure if this survey question was intending to measure this type of experience or not. She ultimately answered “yes” to this question. Only one other respondent was probed on this question. This respondent, who answered “no”, indicated during probing that he never experienced anything like this. However, he later indicated that he once mixed ammonia and bleach together in a bucket when cleaning his home. This caused a chemical reaction and the bucket started smoking. The fumes were so bad that he had to open all of the windows and leave his home for about 20-30 minutes. This occurred about 10 years prior to the interview. Interestingly he did not consider this event when answering this question.

9.1 In what year did the most recent accidental chemical spill or gas release occur?

\_\_\_ \_\_\_ \_\_\_ \_\_\_

Only two respondents received this question. One respondent answered “2000” but was not probed on this question. The other respondent answered “1990s”. During probing she indicated that there was an explosion from a gas leak in her neighborhood sometime in the 1990s but she could not recall the exact year. However, she knew it was after 1989.

9.2 Where did this most recent accidental chemical spill or gas release occur?

*Please mark one location.*

Home     Work     Elsewhere

Only two respondents received this question. One respondent answered “home” but was not probed on this question. The other respondent answered “elsewhere” as there was an explosion from a gas leak in another home, which was about ¼ of a block from her apartment building.

9.3 What were you exposed to? *Please write in answer.*

Only two respondents received this question. One respondent wrote in “bleach and ammonia” and the other respondent did not provide a response to this question. Neither respondent was probed on this question.

9.4 Did you have to receive medical attention because of the most recent accidental exposure?

No  Yes

Three respondents answered this question. One respondent answered “yes” and another respondent answered “no” but neither was probed on their response. The other respondent should have skipped out of this question as he answered “no” to question 9. Instead he marked “no” to this question. He was not probed on his response.

9.5 In the first 24 hours following the most recent accidental exposure, did you experience any respiratory symptoms such as shortness of breath, wheezing, cough, or tightness in your chest?

No  Yes

Three respondents answered this question. One respondent answered “yes” and another respondent answered “no” but neither was probed on their response. The other respondent should have skipped out of this question as he answered “no” to question 9. Instead he marked “no” to this question. He was not probed on his response.

9.5.1 How long did these symptoms last?

*Please mark the single best answer.*

Less than 1 week  
 1 week to 1 month  
 More than 1 month but less than 3 months  
 3 months or longer  
 Don't know/Don't remember

One respondent received this question. This respondent answered “less than 1 week.” She was not probed on her response.

10 Please record the age when you started working in healthcare OR the age you began as a healthcare student, whichever was earlier.

\_\_\_ \_\_\_ years old

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Responses ranged from 14 to 60 years old, with most respondents entering the healthcare field in their 20s and 30s. Most respondents were able to comprehend the intent of this question and provided responses that appeared valid. However, some respondents had difficulty understanding the intent of this question, and some respondents provided invalid responses.

As mentioned above the majority of respondents interpreted this question correctly and provided what appeared to be valid responses. These respondents reported the age they were when they began working in healthcare or the age they were when they began as a healthcare student, whichever occurred earlier. In terms of how they calculated their response, about half of the respondents that were probed indicated that they could remember the exact age they were and the other half provided an estimate. These estimates did not appear to be wild guesses but rather appeared to be close estimates. For example, one respondent answered “40 years old” but during probing stated that she was between the ages of 40 or 45.

Some respondents did have difficulty understanding the intent of this question. Three different types of comprehension problems were found during the evaluation of this question. First, one respondent was unsure if she should report on the age when she first started working in the healthcare field or the age at which she first started working as a nurse. She began working in the healthcare field as a secretary in a hospital at the age of 14. She began her coursework in nursing at age 19 and began working as a nurse at age 22. She ended up correctly reporting age 14, which was how she was when she first began working in a healthcare setting. Another respondent had a different type of comprehension problem. This respondent was not sure if she should provide the age when she first started working in healthcare or the age when she started her most recent job in healthcare. She ended up accurately reporting on the age at which she started her first job in healthcare. Finally, a third respondent had a couple different comprehension problems with this question, which led to response error. First, this respondent was unsure how to answer this question as he began working as a maintenance engineer at the age of 30, however this was not in a healthcare setting. He did not begin working as a maintenance engineer in a healthcare setting until he was 34. The clause “or the age you began as a healthcare student” also confused him as he was never a healthcare student. He indicated that he spent some time thinking about how to answer this question and eventually reported 30 years old – indicating that he has worked as a maintenance engineer (but not in a healthcare setting) since he was 30.

In all, four respondents provided invalid responses to this question. One of these respondents is mentioned above. Like the aforementioned respondent, another respondent answered this question based on how old she was when she first began working as a housekeeper in a non-healthcare setting (36 years old), rather when she first began working as a housekeeper in a healthcare setting (46 years old). A third respondent did not adhere to the second part of the question which read “OR the age you began as a healthcare student, whichever was earlier.” Instead of providing the age she was when she started as a healthcare student (31 years old), she reported the age she was when she began her first healthcare job (33 years old). Finally, one respondent initially answered 30 years old. However, during probing she changed her response to 33 years. When probed on why she changed her response she stated she didn’t know why she had initially wrote 30 years old, as she could recall beginning her nursing certification program on her birthday in 2011, when she was 33 years old. She then began her first job in health care seven months later.

11 How many total years have you worked in healthcare? (*Include years you were a healthcare student.*)

— — total years

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Responses varied between one year and thirty years, with about half of the respondents working in healthcare 15 years or less and the other half working in healthcare more than 20 years. Most respondents were probed on this question. While the majority of respondents had little difficulty answering the previous question, several respondents had difficulty comprehending the intent of this question and several respondents provided invalid responses. This response error was sometimes caused by respondents' uncertainty on what to include in their response but most of the time it was due to calculation errors. Respondents who worked in a healthcare setting intermittently throughout their careers had particular difficulty with this question.

Respondents who appeared to interpret this question correctly provided the total number of years they were a student (if applicable) and worked in a healthcare setting. Some respondents who worked in a healthcare field intermittently over their careers provided the cumulative number of years they worked in this setting. Other respondents attempted to provide the total number of years they have worked in healthcare but provided invalid responses due to calculation errors. A couple of respondents who also worked in the healthcare settings intermittently did not attempt to calculate how many years total they worked in these settings but rather reported on the total number of years they have worked at their current jobs.

Other respondents indicated during probing that they were unsure how to calculate their response regardless if they had worked in these setting intermittently or consistently throughout their careers. One respondent did not know if she should include home healthcare work she did prior to getting her certification. While she had initially answered "3 years," she changed her response to "1 year" during probing as she has only had her certification for a year. If she had included both the time she worked in home healthcare and her schooling her response would have been 4 years. Another respondent also expressed being unsure if she should include the total number of years she has worked in healthcare of just the number of years she has worked as a registered nurse. This respondent began working in the healthcare field at the age of 14 as a secretary in a hospital during the summer. After high school she took nursing courses and has been working in the nursing field ever since. She initially answered "30 years"; however this was a calculation error as she is 48 years old now. When the interviewer pointed this out she then wanted to change her response to 34 years..

In addition to the calculation problems cited above, another respondent had difficulty comprehending the intent of this question as he was confused by the clause "worked in healthcare." This respondent viewed himself as working in a healthcare setting but not as a "healthcare worker." He described his occupation as a maintenance engineer. Another respondent did not read this question in its entirety and misinterpreted the intent. This respondent initially answered "40" to this question. However, during she indicated that she did not read this question in its entirety and thought it was asking how many total hours she worked a week. She answered "40" as she works 40 hours a week. She then changed her response to "2 years," however she was only reporting on the number of years she worked at her first job in healthcare. She excluded the years she was in school, the years she participated in an externship and the years she worked since her first job. Her response should have been more like 10 years.

While other respondents did not overtly express confusion regarding the intent of this question or how to formulate a response to this question, they excluded their schooling or

previous employment in healthcare settings from their response. For example, one respondent did not include the number of years she was a healthcare student. However, it was not determined how many years this would have added to her response. A couple of respondents only reported on how many years they worked in their current healthcare jobs and did not report on previous healthcare jobs. In contrast, one respondent included years that he did not work in healthcare in his response. This respondent reported the number of years she has worked as a housekeeper (15 years), not the number of years she has worked as a housekeeper in a healthcare setting (4 years).

Finally, the response option label “total years” does not account for respondents who have been working in healthcare for less than one year. One respondent who has been a student and working nursing assistant for eleven months answered “one year.” Although her response is not that far from reality, this is potentially problematic for respondents who have been in this field for less time.

12 Are you *currently* employed?  
 No  Yes

Twenty-four respondents received this question. One respondent answered “no” as he was laid off from his housekeeping job at a hospital. This respondent works at a hospital on a per diem basis but he has not been called in to work at this hospital since this past October. While he has secured work as a housekeeper cleaning restaurants through a temp agency, he did not report on this employment here. All other respondents answered “yes” to this question. While two of these respondents are employed, they are not currently employed in a healthcare setting. Of the remaining twenty-one respondents, eight respondents currently work as a housekeeper, eight respondents work as a nursing aide, one respondent works as a licensed practical nurse, and four respondents currently work as a registered nurse (see Table 2).

	Hospital	Nursing Home	Total
Housekeeper	4	4	8
Nursing Aide/CNA <sup>2</sup>	5	3	8
LPN/LVN <sup>3</sup>	0	1	1
Registered Nurse	4	0	4
Total	13	8	21

<sup>1</sup> Three respondents were screened into the study but were determined to be ineligible. Their data is not included in this table.  
<sup>2</sup> Certified Nursing Aide  
<sup>3</sup> Licensed Practical Nurse/Licensed Vocational Nurse

12.1 What is your *current* employment status?  
 Disabled  
 On family leave  
 On extended sick leave  
 Retired  
 Student  
 Other, please specify:

One respondent, who answered “no” to question 12, received this question. This respondent answered “other please specify” and wrote in “laid off.” When probed on this, he indicated that he wrote laid off because he works as a housekeeper at a hospital on a per diem basis, and they have not needed his services since this past October. However, further probing revealed that he has secured work as a housekeeper cleaning restaurants through a temp agency. Another respondent who answered “yes” to question 12 missed the skip pattern following question 12 and attempted to answer this question. After reading it she said to the interviewer “I only work part-time.” She then read the question aloud and said “I don’t work all the time,” and then questioned whether she should mark “disabled” since she was on disability 5 years ago. The interviewer instructed her to select whichever category she felt was appropriate. She ended up marking “other please specify” and wrote in “part-time.” The interviewer did not probe further on this but this respondent should have skipped out of this question completely.

Where do you currently work?

*If you have more than one current job, record information for the job where you work the most hours per week.*

12.2. Name of hospital or medical center:

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Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. All but one of these respondents provided a valid response to this question. One respondent wrote in “N/A” instead of entering the name of the hospital or medical center where she works. This respondent was not probed directly on this question but she indicated elsewhere in the survey that she currently works in a nursing home. It’s possible that she did not answer this question because “nursing home” in not listed in this question. However other respondents who work in nursing homes had no difficulty providing a valid response.

12.3 Borough in New York City or city where located:

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Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. The vast majority of these respondents had difficulty comprehending the intent of this question. The clause “borough in New York City” was particularly confusing for these respondents, and respondents often thought this question did not apply to them. For example, when probed on why she did not answer this question, one respondent replied, “I didn’t think that applied... borough in New York City... we’re not in New York. We’re in Washington D.C.” In fact, seven respondents did not provide a response to this question and one respondent wrote in “no.” Other respondents were able to provide a valid response but still expressed being confused by this clause during probing.

13 Use the lists below to identify the 2-digit occupation code for your *current* job and the 2-digit unit code for where your job is located.

*If you have more than one current job, record information for the job where you work the most hours per week.*

13.1 What is your current occupation?

— —  
occupation code

**List of 2-digit occupation codes**

*Please select single best code for your current job and record above.*

- 01:** Disinfecting or sterilizing technician or technologist
  - 02:** Housekeeper, cleaner
  - 03:** Lab technician, technologist, or assistant in a medical or clinical laboratory
  - 04:** Nursing assistant or orderly
  - 05:** Licensed Practical or Vocational Nurse – LPN or LVN
  - 06:** Registered Nurse - RN
  - 07:** Nurse practitioner
  - 08:** Respiratory therapist or respiratory technician
  - 09:** Ward clerk
  - 10:** Other, please specify
- 
- 

13.2 In which unit do you currently work?

— —  
unit code

**List of 2-digit unit codes**

*Please select single best code for unit where you currently work and record above.*

- 01:** in hospital, administration
  - 02:** in hospital, dialysis
  - 03:** in hospital, ear, nose, and throat (ENT)
  - 04:** in hospital, education
  - 05:** in hospital, emergency room (ER)
  - 06:** in hospital, endoscopy
  - 07:** in hospital, float
  - 08:** in hospital, general or internal medicine
  - 09:** in hospital, intensive care
  - 10:** in hospital, outpatient care
  - 11:** in hospital, pediatric
  - 12:** in hospital, psychiatric
  - 13:** in hospital, pulmonary
  - 14:** in hospital, surgery or operating room
  - 15:** in hospital, other unit, please specify
- 
- 

- 16:** outside hospital
  - 17:** Other, please specify
- 
- 
- 
- 

*13.1 What is your current occupation?*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of question 3.1. Twenty-one respondents received this question. The vast majority of respondents appeared to provide a valid response to this question. However, a couple of respondents expressed difficulty choosing between some of the response options and two cases of response error were found. When responding, a couple of respondents circled the occupation code rather than writing the code in the answer space.

Seven respondents answered “02 Housekeeper, Cleaner.” These individuals described their job duties as cleaning bathrooms (e.g., toilets, showers, sinks, and mirrors), cleaning patients’ rooms (e.g. cleaning surfaces, changing bed linens), cleaning administrative offices, and common areas of the hospitals and nursing homes where they worked. Most respondents’ official job title was “housekeeper,” however some respondents used alternative terms to describe their occupation, including “maintenance engineer,” and “environmental aide.” One respondent who works as a housekeeper and as a dietary aide appropriately selected “02 Housekeeper, Cleaner” as she read and adhered to the instruction to select the job where she worked the most hours.

Seven respondents answered “04 Nursing Assistant or Orderly.” These respondents discussed performing a variety of tasks at their jobs, including feeding, bathing, and helping patients to the bathroom, transporting patients to different areas of the hospital or nursing home, cleaning patients’ rooms, starting IVs, checking vital signs, and transporting specimens to the lab. A couple of respondents indicated that their official job title was nursing assistant; however, most respondents used different terms to describe their occupation or job, including “CNA,”

“medical assistant,” “support assistant,” “nurse tech,” “patient care tech,” “home health aide (in nursing home).”

One respondent selected “05 Licensed Practical or Vocational Nurse” and indicated that she has a license in nursing but was not probed further on this question.

Four respondents answered “06 Registered Nurse.” These respondents discussed having more education than other nursing occupations such as LPNs and nursing aides. Two of these respondents described their job title as an RN. However, the other two respondents indicated that their jobs titles were “Clinical care facilitator” and “RN case coordinator.” Although they both were able to select this category as they are technically RNs, one of these respondents was unsure about the validity of her response. She explained that as a clinical care facilitator she does not provide direct care to specific patients as part of her daily duties. Rather she oversees the care of all patients in her unit and the work of other nurses. She was unsure if she should select RN or other, but ultimately selected RN as she earned a degree in registered nursing.

Finally two respondents provided responses that were invalid. One respondent selected “01 Disinfecting or Sterilizing Technician or Technologist.” When answering this question this respondent indicated that he was having a hard time choosing between item 01 and item 02. While his technical title is maintenance engineer he feels he does a lot of sterilizing and disinfecting at work, which is what drew his attention to item 01. Also the term “housekeeping” made him think of a person who cleans hotel rooms, which is not how he would describe his occupation. Ultimately he selected item 01, however upon further probing it was determined that he should have selected housekeeping as his daily tasks involve cleaning surfaces such as toilets, sinks, floors, chairs, beds, handrails, door handles, etc. Another respondent answered “03 Lab Technician, Technologist, or Assistant in a Medical or Clinical Laboratory.” During probing she indicated that she chose this response options because it was the response option that best described her occupation. She performs a variety of tasks at work including triage, ordering and stocking supplies, sterilizing surfaces in exam rooms, and setting out instruments for doctors. She indicated that she was drawn to this response option because it said “assistant in a medical” but after reading the category a second time during probing she realized that she does not work in a laboratory and that this category was not appropriate. She read through the list of response options again and saw “04 Nursing assistant or Orderly,” which she had looked over when initially answering. She then changed her response to item 04.

### 13.2

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of question 3.2. Twenty-one respondents received this question. See Table 3 for a distribution of responses to this question.

Unit Code	Frequency
<b>01:</b> in hospital, administration	1
<b>02:</b> in hospital, dialysis	0
<b>03:</b> in hospital, ear, nose, and throat (ENT)	0
<b>04:</b> in hospital, education	0
<b>05:</b> in hospital, emergency room (ER)	1
<b>06:</b> in hospital, endoscopy	0
<b>07:</b> in hospital, float	3
<b>08:</b> in hospital, general or internal medicine	2



<b>09:</b> in hospital, intensive care	1
<b>10:</b> in hospital, outpatient care	4
<b>11:</b> in hospital, pediatric	0
<b>12:</b> in hospital, psychiatric	0
<b>13:</b> in hospital, pulmonary	0
<b>14:</b> in hospital, surgery or operating room	0
<b>15:</b> in hospital, other unit, please specify	1
<b>16:</b> outside hospital	3
<b>17:</b> Other, please specify	5

About half of the respondents had no difficulty providing a response to this question as the response list contained the unit name in which they currently worked. For example, an RN who works as a case manager in a hospital, was easily able to select “01: in hospital, administration” as her response. Likewise, respondents who were not assigned to a single unit but instead work in various units were able to select “07: in hospital, float.” However, other respondents had difficulty selecting an appropriate response to this question.

Several respondents could not find a unit that best described where they currently work and this made it difficult for them to provide a valid response to this question. In one case this was because the respondent initially overlooked the appropriate response category when answering the question. This respondent selected “17: other, please specify” to indicate that he works in various department or floats. When probed on why he did not select “07: In hospital, float,” he indicated that he hadn’t read that category when he first answered the question. Other respondents had difficulty selecting a response to this question because the unit in which they work was not listed in the response options. For example, one respondent indicated that she was looking for a unit labeled “patients’ rooms” because this is the area of the hospital she cleans. This respondent ultimately selected “07: in hospital, float” as she cleans patients’ rooms in different units within the hospital. While this respondent was able to provide a valid response, others were not. For example one respondent, who works in a neonatal intensive care unit of a hospital, did not see this category listed, so instead she selected “09: in hospital, intensive care.” This question was particularly problematic for respondents who worked in a nursing home setting. Because the majority of the response categories had “In hospital” in the text, these respondents often felt this question didn’t apply to them. For example, when answering this question one respondent stopped and stated “I work in a nursing home... and this is for hospitals. Are they considering a nursing home the same as a hospital?” When answering, about half of the respondents who worked in a nursing home selected “16: outside hospital” and about half selected “17: Other, please specify” and wrote in nursing home. One respondent who worked in a nursing home answered “10: In hospital, outpatient care.” When probed on her response she indicated that she didn’t see nursing home on the list. She selected this response knowing that it was not 100% accurate as she works in an inpatient care facility. After discussing this question during probing, she then wanted to change her answer to “outside hospital.” Another respondent, who works as a housekeeper cleaning the administrative offices of a nursing home asked the following when answering this question, “What do they mean by other? ...other units for housekeeping?” When instructed to select whichever answer she thought was appropriate this respondent selected “01: in hospital, administration,” but then quickly changed her response to “17: Other, please specify” and wrote in “housekeeping.” When probed on her response, this respondent indicated that she answered this way because she works in the housekeeping department of a nursing home. However, she only cleans the administrative offices in the nursing home.

This question could be improved by expanding the list of units to include units within nursing homes. Additionally, respondents who worked in hospital settings indicated that the following categories could be added to the list: neonatal intensive care unit, intermediate care, labor and delivery, and mother and baby.

14 How many hours per week do you work in your *current* job?      \_\_\_ \_\_\_ hours per week

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Respondents reported working anywhere from 12 hours to 40 hours a week. The majority of respondents indicated that they work a base number of hours a week and they pick up extra shifts when possible. When answering this question most respondents reported the minimum number of hours they are required to work a week or the number of hours they typically work a week. Note that in the majority of these cases, a typical week was the minimum number of hours they work and not the average number of weeks. However, one respondent whose work schedule can vary from 25 to 32 hours a week reported that she works 32 hours a week. When probed on the average number of hours per week she works, she reported 30 hours. Other cases of response error were found as well. One respondent did not report on her current work schedule. This respondent answered that she works 40 hours per week. However during probing she indicated that she is currently working three 12 hour shifts each week. She then indicated that next month she will start working five 8 hour shifts. Both schedules are considered full time employment at the nursing home where she works. Finally, respondents who work two jobs appeared to only report on the number of hours they work at their full time job, and not the hours they worked at part-time weekend jobs.

15 What year did you begin your *current* job?      \_ \_ \_ \_

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Responses ranged from 1996 to 2012, with most respondents beginning their most recent jobs within the last five years. About half of the respondents we interviewed were probed on this question. Most of these respondents could remember the exact year or the exact date they started their most recent job. One woman easily recalled this date as she started her job the same day her granddaughter was born. A couple of respondents changed their initial response to this question. One respondent initially reported “2010” but later during probing indicated that it might have been early 2011. Another respondent initially answered “2012” but then crossed this off and wrote in 2011. When probed on why she initially answered 2012 she could not recall but stated that she began her current job in December of 2011. Finally, there was one other case of error found. This respondent reported that she began her most current job in 1996. However, this is the year she started working as a housekeeper in general, not as a housekeeper at her current job. She started working at her current job as a housekeeper five years prior to the interview. It was not clear why she did not report on her current job when answering this question but she made the same error elsewhere in the interview.

16 In this job, are you regularly exposed to vapors, gases, dusts, or fumes?      \_\_\_ No    \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Nine respondents answered “no” and twelve respondents answered “yes.” When probed on what they thought this question was asking about, respondents who answered no, indicated that they were thinking of dust from construction, vapors from bronchodilators, fumes

from cleaning products, and more generally “things that are in the air.” These respondents indicated that they never experienced these things in the workplace. One respondent, who answered “no” to this question, indicated that she would have answered “yes” if the question had just asked about dust in the workplace. But because she is not exposed to vapors or fumes, she answered no. Respondents who answered “yes” were considering similar types of exposures. The majority of these respondents discussed either experiencing dust in the workplace and/or fumes from cleaning products. For example one respondent discussed being exposed to fumes at work when housekeeping waxes the floor or uses Virex spray. One respondent, who answered yes to this question, also discussed being exposed to what she described as “God awful” odors coming from the critical care rooms that she cleans. She often has to clean these rooms after patients are moved out of them. She is not sure what the source of the odor is but it is so strong that she usually wears a mask when cleaning these rooms. Like the respondent above, one respondent indicated that she is only exposed to dust at work and not fumes or vapors. She checked yes for this question and then circled dust to make this distinction. In terms of comprehension issues with this question, one respondent was unfamiliar with the term “vapors” but thought it might have something to do with air. However, she was able to answer yes to this question as she is exposed to dust and fumes from cleaning supplies in the hospital where she works. Finally, most respondents discussed being exposed to these things on a regular basis. However, one respondent answered “yes” to this question because of a recent isolated experience in which an odor coming from construction in the building was so strong she had to open windows on her floor.

17 In the last **12 months**, have you observed any of the following in the area(s) where you work?  
17.1 Water leakage or water damage indoors on walls, floors, or ceilings?    \_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Fifteen respondents said “no” and six respondents answered “yes” to this question. Respondents who answered “no” indicated during probing that they had never witnessed or known of any water leaking where they worked. Respondents who answered “yes” to this question reported seeing water leaking from ceilings when it rains and/or from broken pipes in the buildings where they worked. Although some respondents indicated that these water leaks were recurring; they were not directly probed on whether or not these leaks occurred within the last 12 months.

17.2 Visible mold growth (not on food) indoors on walls, floors, or ceilings?    \_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. All but one of these respondents answered “no” to this question. Respondents who answered “no” indicated that they have never seen or smelled any mold in the building where they work. The one respondent who answered “yes” to this question, also answered “yes” to the previous question regarding water leaks in her workplace. This respondent indicated that there has been water leaking in a storage closet at her work, and mold has now begun to grow in the corner of the closet.

17.3 Odor of mold or mildew (not from food)?    \_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Nineteen respondents answered “no” and two respondents answered “yes.” Among

the respondents who answered “no” most confirmed that they have never smelled any mold or mildew odor where they worked. However, a couple of respondents indicated that they do not know what mold or mildew smells like. Of the two respondents who answered “yes” to this question, one respondent may have provided an invalid response. This respondent discussed how the containers where they put patients’ waste smell like mold but he has never observed any mold in them. He then explained that these containers are made from an “industrial plastic,” which gives off a strange odor. It’s not clear if this odor was coming from mold or not. The other respondent who answered “yes” to this question indicated that there is a mildew smell coming from the area where water has leaked in her work area.

18 In the last *12 months*, have there been renovations or construction in, or next to, the area(s) where you work?

No  Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Eleven respondents answered “no,” nine respondents answered “yes” and one respondent left this question blank. There were several cases of response error found with this question. First, the respondent who left this question blank later indicated during probing that she should have answered “yes” to this question. She did not know why she didn’t answer yes initially. However, she recalled that patients’ rooms were renovated over the past year. This involved painting walls and removing flooring. Three respondents who answered “no” to this question also provided invalid responses. These respondents all recalled renovations that occurred within the past year during probing. This included renovating bathrooms, painting interior walls, and renovating wings of the hospital. One of these respondents discussed being unsure if she should have answered “yes” to this question as the area under construction is not next to her work area but she has to pass it when walking from the elevators to her work area. Although this construction area is not next to her work area, odors coming from it were so strong recently that she had to open up windows in her work area. After some debating she changed her answer from “no” to “yes.” Other respondents did appear to provide valid responses to this question. Some respondents, who answered “no” to this question, indicated that there not been any construction near their worksites in the 12 months. Respondent who answered “yes” indicated that there was construction near where they work, including building additions onto the current structure, remodeling rooms, painting walls, replacing flooring, moving furniture, and changing light fixtures.

18.1 Painting walls and fixtures?

No  Yes

Twelve respondents answered this question. Two respondents should have skipped out of this question because they answered “no” to question 18; however they missed the skip pattern following question 18 and answered this series of questions. The respondent, who did not provide a response to question 18, did provide a response to this question. Of these respondents, two answered “no” and ten answered “yes.” The two respondents who answered “no” to this question both indicated that there was construction being done in their workplace but they did not know if this construction involved painting. Because they had never seen any walls or fixtures being painted in their workplace they answered “no.” Respondents who answered “yes” to this question indicated that they have observed painting of the walls near their work area or directly in their work area.

18.2 Ripping out and replacing walls, woodwork, and partitions

No  Yes

Twelve respondents answered this question. Two respondents should have skipped out of this question because they answered “no” to question 18; however they missed the skip pattern following question 18 and answered this series of questions. Of these respondents seven respondents answered “no” and five respondents answered “yes.” The respondent, who did not provide a response to question 18, did provide a response to this question. A couple of respondents who answered “no” to this question were probed on this question. These respondents indicated that they have never seen any ripping out or replacing of walls, woodwork or partitions where they worked. Respondents who answered “yes” to this question indicated that they answered yes as they were doing renovations to their workplaces. In some of these cases, respondents had observed walls being removed to expand the existing space. However, in a couple of cases the respondents had not actually seen walls being removed but assumed that something like this was occurring. In these cases this construction was covered by heavy plastic, so these respondents did not know exactly what type of construction was taking place. One respondent answered “yes” to this question because new walls had been constructed in his workplace. However, after talking about this question during probing he wasn’t sure if he should have answered “yes” to this question, as they did not rip down or replace walls. Finally, one respondent answered “yes” to this question because they had expanded the office space in the building where he works, which involved ripping down walls; however this construction took place over a year ago, which was outside of the reference period in this question. Other respondents were not probed extensively on the reference period in this question, so it is not clear if this was a problem for other respondents as well.

18.3 Ripping out and replacing floors, carpets and fixed furniture No Yes

Twelve respondents received this question. Two respondents should have skipped out of this question because they answered “no” to question 18; however they missed the skip pattern following question 18 and answered this series of questions. The respondent, who did not provide a response to question 18, did provide a response to this question. Of these respondents, four respondents answered “no” and eight respondents answered “yes.” Only one respondent who answered “no” to this question was probed on her response. This respondent indicated that she had never seen anyone rip out and replace carpet where she worked, however, they did put new carpet down over existing tile. She was not at work the day this occurred. When probed on why she answered “no” to this question given this event, she said she did not think of this initially when answering this question. It’s not clear if this is response error or not. Most of the respondents who answered “yes” to this question were probed on their response. These respondents indicated that they witnessed carpet and/or flooring being removed and replaced in and around their work areas. One respondent, who initially answered “yes” to this question, changed her response to “no” during probing as she works in a new wing of her hospital and they have not ripped out and replaced floors near where she works. It was not determined why she initially answered “yes” to this question.

19. Thinking about your current job and what you have done in this job in the last **12 months**:  
Do you clean medical equipment or instruments with disinfectants or sterilants such as the following chemicals (and commercial products)

- Acetic acid
- Alcohol
- Bleach or bleach solution (for example, Clorox<sup>®</sup>)
- Enzymatic cleaners (for example, Asepti-Zyme<sup>®</sup>, 3M Rapid Multi-Enzyme<sup>®</sup>)
- Ethylene oxide (also called EtO)

- Formaldehyde
- Glutaraldehyde (for example, Cidex<sup>®</sup>, ColdSport<sup>®</sup>, Endocide<sup>®</sup>, Glutacide<sup>®</sup>, Hospex<sup>®</sup>, Metricide<sup>®</sup>, Onicide<sup>®</sup>, Rapicide<sup>®</sup>, Sonacide<sup>®</sup>, Sporicidin<sup>®</sup>, Wavicide<sup>®</sup>)
- Hydrogen peroxide (for example, Accell<sup>®</sup>, Optim<sup>®</sup>, Sporox<sup>®</sup>)
- Hydrogen peroxide and peracetic acid (for example, Acecide<sup>®</sup>, Metrex<sup>®</sup>, Peract<sup>®</sup>)
- Hydrogen peroxide gas plasma (for example, Sterad<sup>®</sup> system)
- Ortho-phthalaldehyde (for example, Cidex OPA<sup>®</sup>)
- Peracetic acid (for example, Steris<sup>®</sup> system)

\_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. This question was targeted towards those who work in central sterilization or central supply in a hospital/nursing home. We did not have any respondents in our sample who worked in these areas. However, twelve respondents answered “yes” to this question as they misinterpreted the intent of the question. Seven respondents answered “no” and three respondents did not provide a response to this question. In addition to the interpretation problem, many respondents thought the bullets, which listed example products, were check boxes and marked the products they use at work. In these cases, respondents either selected the products they use and did not mark yes or no, or they marked the products they use and checked yes. It appears that a large source of the problem with this question is that respondents were drawn to products they use at work and consequently answered “yes” to indicate that they use these products to clean at work, not to indicate that they clean medical equipment and instruments in a central sterilization unit. These findings are discussed in more detail below.

Respondents who answered “yes” to this question were employed as registered nurses, nursing assistants, and housekeepers. The majority who answered “yes” worked in hospitals as opposed to nursing homes. Most respondents, who answered “yes” to this question, indicated during probing that they answered “yes” to this question because they use products listed in this question to clean surfaces at work. Some of these respondents also indicated that they clean medical equipment such as breathing machines, oxygen tanks, IV poles, fetal monitors, vital machines, pulse oximeters, stethoscopes, baby monitors, pumps, instruments such as scalpels, instruments used during examinations, and instruments used during delivery. When probed on the type of cleaning products used these respondents reported that they used alcohol, alcohol wipes, bleach, Clorox wipes, enzymatic cleaners, 3M Rapid Multi-Enzyme, glutaraldehyde, Cidex, Hospex, Onicide, Sani-cloth, peracetic acid, and Virex spray. As mentioned above, these respondents did not use these products to clean medical equipment or instruments in a central sterilization unit, but rather to clean surfaces and equipment in patients’ rooms and examination rooms. For example, a housekeeper who works in a hospital and answered “yes” to this question discussed using multiple products on this list to clean surfaces in patients’ rooms. He indicated that he uses alcohol to wipe down fixtures in patients’ room such as the sink and the railings around their beds. He also uses bleach when cleaning the toilet, sink, and bathtub, and 3M Rapid Multi-Enzyme to clean portable toilets in patients’ rooms. He will also use peracetic acid to clean containers where waste from colostomy bags is placed. Similarly, another respondent who works as a housekeeper in a nursing home, and answered “yes” to this question, discussed using a bleach solution to clean bathrooms in patients’ rooms, enzymatic cleaners to wipe down bed frames and sink faucets, and glutaraldehyde, specifically Hospex and Onicide to clean the plastic mattress covers in patients’ rooms. Some of these respondents did not identify specific products, but rather indicated that they use a bleach solution or alcohol wipe. Another respondent, who answered “yes” to this question and works as a nursing assistant in a hospital, discussed using

Cavi wipes to clean medical equipment in examination rooms, including IV polls, vitals machines, and pulse oximeters. One respondent, who answered “yes,” provided a slightly different reasoning for her response to this question. This respondent, who works as an RN on the labor and delivery unit of a hospital, indicated that she answered “yes” to this question as she wipes off instruments used during delivery and places them in a solution before they are picked and taken to central sterilization. She could not recall the name of this solution.

In addition to misinterpreting the question intent, one respondent answered this question in error as she did not consider her current job when answering this question. This respondent changed jobs within the last 12 months. At her current job she does not clean anything. However, she answered “yes” because at her previous job she cleaned vital machines and exam tables using Clorox wipes.

The majority of respondents who answered “no” to this question were housekeepers. Half the respondents who answered “no” worked in nursing homes and the other half worked in hospitals. One respondent who answered “no” interpreted this question as asking if she cleans medical equipment and instruments in a laboratory setting (or a central sterilization unit). Because she does not work in such a place she answered “no” to this question. Other respondents, who answered “no”, indicated that they thought this question was asking them if they clean medical instruments used to examine and operate on patients but not necessarily in a central supply location. The types of instruments these respondents considered when answering this question included stethoscopes, otoscopes, needles, and more generally “instruments used in the operating room.” While these respondents did clean surfaces (e.g., beds, chairs, exam tables, bathrooms), they did not clean the types of instruments mentioned.

A couple of respondents, who ultimately answered “no” to this question, were unsure of the question intent. One respondent, who is a nursing assistant, indicated during probing that she found this question confusing because she does clean with alcohol pads and alcohol was listed in the list of products. However, she did not recognize any of the other products listed and wasn’t sure if this question applied to her. She ended up checking “alcohol” and “no” to this question. Another respondent initially answered “no” to this question as she was thought this question was asking about cleaning medical instruments, which she does not do. However, when she read the question a second time during probing she noticed that the question also said “medical equipment.” She then wanted to change her answer to “yes” as she does clean medical equipment such as blood pressure machines. Note that as with respondents who answered “yes” to this question she doesn’t clean this equipment in central sterilization but rather she will wipe them down in patients’ rooms with an alcohol wipe.

As mentioned above three respondents did not provide a response to this question. Like other respondents two of these respondents marked the kind of cleaning products they used but did not check “yes.” These respondents did not clean medical equipment and instruments in a central sterilization unit but rather they cleaned surfaces, medical equipment and instruments in patients’ rooms using alcohol and bleach. Interestingly when probed on why she selected alcohol, one of these respondents discussed how she only cleans certain instruments, such as scissors or scalpels, and all other instruments are sent to the engineering department to be sterilized. The third respondent, who did not answer this question, works two jobs and was unsure which job to consider when answering this question. At her full time job she does not clean but at her part time job she does clean surfaces in patients’ rooms. She ended up answering “no” to this question based on what she does at her full time job.

In sum this question needs to be edited to improve respondents’ comprehension of the question intent. As highlighted above nurses and housekeepers perform a variety of cleaning tasks as part of their job. This included cleaning surfaces such as chairs, tables, and beds, cleaning equipment and instruments in patients’ rooms such as equipment used to monitor vital signs, and cleaning more invasive instruments such as tools used during delivery. Nurses and

housekeepers also clean medical equipment and instruments at various stages prior to sterilization at central supply or central sterilization. This can range from wiping down equipment with disinfectant wipes to placing instruments in sterilization solution prior to them being picked up by the central supply unit. The wording of this question needs to be changed to indicate to respondents that it is asking about cleaning medical equipment and instruments in a central supply or central sterilization unit. It may also be beneficial to reorder the *Exposure to Disinfectant & Sterilant Products Used on Equipment and Instruments* (question 19 series) and the *Exposure to Cleaning and Disinfectant Products Used on Fixed Surfaces* (question 20 series) sections of the questionnaire, so that the latter section precedes the former. In fact, one respondent who incorrectly answered “yes” to this question realized his error once he read question 20. He then wanted to change his answer to this question to “no.”

19.1 What are the names of the disinfectants or sterilants you use to clean medical equipment or instruments?

*Please write in brand or product names, how many hours per day and how many days per week, on average, you disinfect or sterilize medical equipment or instruments, and whether you wear gloves when using these products*

Brand or Product Names	Hours per day				Days per week			Gloves Worn		
	< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Twenty-one respondents received this question. Seven respondents who answered “no” to question 19 skipped out of this question. Of the 12 respondents who answered “yes” to question 19, nine provided responses to some or all of the items in this matrix, two respondents left this question blank, and one respondent wrote in “N/A” under the Brand or Product Names column. Note that all of the respondents who answered “yes” to question 19 interpreted that question incorrectly and therefore their responses to this question are invalid. Aside from misinterpreting the intent of this question, respondents had a lot of difficulty providing responses to this question. First, respondents had difficulty recalling the brand or product names of the cleaning products they use at work. Second, respondents found it difficult to report how often they use these products using the categories provided. These findings are discussed in more detail below.

Most respondents, who misinterpreted the intent of question 19, also misinterpreted the intent of this question. When probed on this question these respondents discussed cleaning surfaces, and/or medical equipment and instruments in patients’ rooms and in examination rooms. No respondents indicated that they do any type of cleaning in a central sterilization unit. However, two respondents did indicate that they placed instruments into a cleaning solution before they are transferred to central sterilization. Interestingly, one respondent, who interpreted question 19 as asking about what types of cleaning products she uses to clean surfaces, interpreted this question as asking about cleaning medical equipment and instruments. Because



she doesn't clean any medical equipment or instruments she thought this question did not apply to her and wrote "N/A" under the Brand or Product Names column.

In addition to misinterpreting the intent of this question, respondents often had difficulty providing responses to the items in this matrix. First, respondents had difficulty recalling the brand or product names of the cleaning products they used at work. In these cases respondents reacted to this matrix in a number of different ways. Some respondent would not answer any of the questions in this matrix, while others would leave the answer space blank or write in "?" under the Brand or Product Names column and fill in the remaining columns. Other respondents wrote in the generic name (e.g., bleach), and one respondent wrote in an incorrect brand name (i.e., Clorox wipes instead of CaviWipes). While respondents could identify the color of the containers or the color of the product itself they often did not know the name of it. Many respondents knew the generic names of the products they used such as bleach or ammonia, but did not know the brand names. Respondents often commented that the brands they used at work were industrial strength cleaning products and were not the same products that are sold in commercial stores. Furthermore respondent often discussed using more cleaning products at work than they listed in this question. While it was not always clear why they did not recall all of the products they use at work, in some cases it was because they could not recall the names of the other products or because they simply did not recall these items when answering the questions in this matrix.

Respondents were not consistently probed on how they calculated their response to the questions which asked how many hours per day and how many days per week they used these products. Of those probed, three respondents had little difficulty calculating their response and three respondents had significant difficulty calculating a response and mapping this response onto the categories provided in the matrix. One respondent who had no difficulty providing a response to this question could not recall the brand name of the wipes she uses at work but indicated that she uses that 1-2 hours a day, more than 3 days a week. During probing this respondent indicated that she spends the beginning of every shift wiping down any surface that could have been touched by another person. She thinks this process takes between one to two hours to complete. The second respondent who had no difficulty answering this question indicated that she uses CaviWipes more than 4 hours a day, one day a week. This respondent only works one day a week and she indicated that she is using CaviWipes constantly while at work. Therefore, she thinks she uses them more than 4 hours a day. The third respondent who had no difficulty answering this question was a little more methodological in her approach. This respondent indicated that she uses "bleach" 1-2 hours a day, more than 3 days a week. She was able to formulate her response by thinking about how many patients are seen a day (20 on average) and how long it takes to clean a room (5 minutes), which would mean she cleans between 1-2 hours every shift. The respondents who had difficulty formulating a response to the questions which asked about how many hours and how many days a week they use these products, did not have as consistent schedules or consistent tasks at their workplace. For example, one respondent answered that he uses "peracetic acid- Steris," "Clorox bleach," "Hydrogen Peroxide – Optim" more than four hours a day, more than 3 days a week but when probed on this matrix he replied "It's kind of weird how it's asked. Because it's an eight hour day. I know I do at least four, so that's why I chose that." This respondent was considering how often he is using these cleaning products in general during his shift, rather than how much he is using each one. Technically it's not possible for him to use these three products more than four hours a day, more than 3 days a week in the 40 hours a week he works. Another respondent also reported using cleaning products for more time than he works in a given week. Two other respondents indicated that the amount of time they spend cleaning at work can vary depending on the shift. One respondent, who cleans instruments after delivery, indicated that the amount of time she spends doing this in a given week depends on how many patients they treat and how

well staffed they are on a given shift. In her unit, techs are typically required to clean all of the instruments however if it is a busy shift she will help out with this task. She ended up answering that she uses this product 1-2 hours a day, 2-3 days a week. Similarly another respondent indicated that he uses Lysol 1-2 hours a day, more than 3 days a week; however this amount varies depending on how many rooms he needs to clean on a given shift.

Finally, all respondents who answered this question indicated that they wear latex or vinyl gloves when using the products listed. However, one respondent marked that he wears gloves but upon probing he indicated that more often than not he doesn't wear any gloves when using these products.

19.2 Thinking about your current job and what you have done in this job in the last **12 months**:  
Do you ever *prepare* medical equipment or instruments for disinfection or sterilization? \_\_\_ No  
\_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Eighteen respondents answered this question. Fourteen respondents answered "no" and four respondents answered "yes." Four respondents who answered "no" to question 19 should have skipped out of this question but instead provided a response. Two respondents who did not provide a response to either question 19 or question 19.1 also answered this question. Note that all of the respondents who answered "yes" to question 19 misinterpreted the intent of that question and provided an invalid response. Because they do not work in a central sterilization unit they should have skipped this entire section of the survey. Interestingly while respondents did not interpret questions 19 and 19.1 as asking about cleaning that occurs in central sterilization units, some respondents did interpret this question as asking about such cleaning. These findings are discussed in more detail below.

As mentioned above four respondents who should have skipped out of this question ended up providing a response to this question. All four of these respondents answered "no" to question 19 and then properly skipped out of question 19.1 but then answered this question. Questions 19 and 19.1 appeared on page 6 of the instrument used during the interviews and question 19.2 appeared on page 7. This may have attributed to the difficulty these respondents experienced with the skip pattern.

Two respondents who did not provide a response to questions 19 and 19.1 answered "no" to this question. One of these respondents was probed on this question. Interestingly, this respondent interpreted questions 19, 19.1 and 19.2 as asking about different kinds of cleaning. That is, she interpreted question 19 as asking about cleaning instruments such as scissors or scalpels, which she does; question 19.1 as asking about cleaning surfaces such as tables and carts, which she does; and this question as asking about sterilizing instruments such as a wound vacuum in a central sterilization setting. Because she does not sterilize medical equipment and instruments in these setting she answered "no" to this question.

Of the remaining fourteen respondents who properly filtered into this question based on their response to question 19, eight respondents answered "no" and four respondents answered "yes." The majority of these respondents who answered "no" to this question interpreted this question as asking about sterilizing instruments in a central sterilization unit. Because they do not do this type of work, they answered "no" to this question. One respondent who answered "no" to this question adhered to the first half of the question which read "do you prepare medical equipment or instruments" and did not encode the second part of the question which read "for disinfection or sterilization." As a result he interpreted this question as asking if he lays out medical equipment or instruments for doctors to use on patients. He answered "no" to this question as laying out medical equipment or instruments is not part of his work duties. Another respondent who answered "no" to this question had interpreted questions 19 and 19.1 as asking

about cleaning surfaces but interpreted this question as asking about cleaning medical equipment or instruments. For some reason she did not encode the term “medical equipment and instruments” when answering question 19 and 19.1 but did here. Because she only cleans surfaces, she answered “no” to this question.

None of the respondents who answered “yes” to this question sterilize medical equipment or instruments in a central sterilization unit. However, two of the respondents answered “yes” to this question as they place instruments used during invasive procedures such as instruments used during delivery and colonoscopies in a solution prior in preparation for them to be picked up by central sterilization. The other two respondents who answered “yes” to this question did so because they wipe down equipment such as vital machines, fetal monitors and IV polls in patients’ rooms after they have been used.

**19.2.1 Which tasks do you perform to prepare medical equipment or instruments for disinfection or sterilization?**

*Please indicate if you perform these tasks listed in the first column of the following table.*

*IF YOU ANSWER ‘YES’ FOR A TASK, please provide answers for how many hours per day and how many days per week, on average, you perform the task.*

Tasks	Do you perform this task?		If Yes →	Hours per day				Days per week		
	Yes <input type="checkbox"/>	No <input type="checkbox"/>		< 1	1-2	3-4	>4	1	2-3	>3
Remove gross contaminants	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Purge waste from scopes, instruments, or equipment by flushing	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Refill or change disinfectant or sterilization solutions	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Remove gross contaminants*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. As in the previous question, respondents misinterpreted the intent of this question and this led to response error in several cases. While the majority of respondents appropriately skipped out of this question as they answered “no” to questions 19 or 19.2, a couple of respondents answered this question in error, and one respondent skipped out of this question in error. Based on their responses to question 19.2, four respondents should have received this question, however only three of these respondents provided a response. One of these respondents answered “no” and the other two respondents answered “yes” and answered the additional questions in the matrix. Two respondents were probed on their response. The respondent who answered “no” indicated that he thought this question was asking if he removes “body fluids,” which he never does. One respondent, who answered “yes” to this question and indicated that he does this task 3-4 hours a day, more than 3 days a week, was unsure of the intent of this question. He indicated during probing that he doesn’t necessarily prepare equipment for disinfections or sterilization, but he does clean portable toilets and containers that are marked “hazardous materials” and contain things like diapers. He was not sure if this question was intending to measure this task.

As mentioned above a couple of respondents, who answered “no” to question 19.2, answered this question in error. Both of these respondents answered “yes” to this question and answered the additional questions in the matrix. For one of these respondents it was not clear why they answered “no” to question 19.2, but when probed on this question she indicated that she answered “yes” (more than four hours, 2-3 days a week) as she removes items that she

considers to be gross or disgusting from patient rooms, such as diapers. She also discussed “gross smells” coming from patients who have bad wounds. The other respondent who answered “no” to question 19.2 did so because she was thinking about “sitting equipment out” to be picked up by central sterilization, which she does not do. However, she answered “yes” to this question (more than 4 hours a day, 1 day a week) because she removes containers that patients’ urinate in and places them in a green bucket to be picked up by central sterilization.

Finally, one respondent skipped out of this question in error. This respondent answered “yes” to question 19.2 as she places instruments used during delivery into a cleaning solution before they are picked up by central sterilization, however she did not provide a response to this question. She indicated during probing that she never removes gross contaminants, which she considered to be excessive body fluids in preparation for sterilization. She left this question unanswered because she did not initially see the “no” answer space when answering this question. However, later during probing on question 19.4 she did discuss wiping bodily fluids, including blood, off of these instruments with a gloved hand before placing them in the cleaning solution. It’s not clear if this sort of action is intended to be captured in this question.

#### *Purge waste from scopes, instruments, or equipment by flushing*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. As with the previous question, most respondents skipped out of this question. However, three respondents answered “no” to question 19.2 and should have skipped out of this question but provided a response. All of these respondents answered “no” to this question. One respondent who should have answered this question skipped over it. This respondent had difficulty understanding the intent of this question. The only type of “flushing” this respondent was familiar with is a procedure where patients’ eyes are flushed to remove foreign objects and she was not sure how this procedure was related to cleaning instruments. She did not initially see the “no” checkbox when answering. If she had, she would have answered “no” to this question. Finally, three respondents filtered into this question properly and were able to provide a response. One respondent answered no, one respondent answered “yes, 3-4 hours a day, more than 3 days a week,” and another respondent answered “yes, 2-3 hours a day, 2-3 days a week.” None of the respondents who provided a response were probed on this question.

#### *Refill or change disinfectant or sterilization solutions*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. The majority of respondents skipped out of this question. However, two respondents who answered “no” to question 19.2 should have skipped out of this question but provided a response instead. Both of these respondents answered “no” to this question. One respondent who should have answered this question, skipped out of it. This respondent never refills or changes disinfectant or sterilization solutions and was not sure why she was being asked about this task. She did not see the “no” checkbox when answering initially. If she had seen this category she would have answered “no” to this question. Finally, four respondents filtered into this question properly. Only one respondent appeared to provide a response that could be valid. This respondent answered “yes, 1-2 hours a day, 2-3 days a week” and indicated during probing that she refills sterilization solution in which she places instruments before they are taken to central supply. Two other respondents answered “yes” and answered how often they perform this task; however the tasks they were referring to included refilling hand sanitizer containers and chemicals used to clean surfaces. The fourth respondent who answered “yes” to this question was not probed extensively on what types of disinfectant or

sterilization solutions he was considering when answering however he did discuss having difficulty determining how often he performs this task. He initially answered “yes, 3-4 hours, more than 3 days a week”; however upon probing he indicated that how often he performs this task varies greatly across shifts. While he typically does it every shift, the amount of hours he spends performing this task can vary.

19.3 Thinking about your current job and what you have done in this job in the last **12 months**: Do you ever disinfect or sterilize medical equipment or instruments using **automated systems**?  
 \_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Five respondents should have skipped out of this question entirely but missed the skip pattern following question 19 and filtered into this question properly from question 19.2. One respondent who should have answered this question based on her responses to previous questions skipped over this question as she felt it was repetitive. This respondent interpreted questions 19.2 and 19.3 as asking about the same task. She interpreted question 19.2 as asking if she prepares medical equipment for sterilization and 19.3 as asking if she operates a machine which sterilizes this equipment. Interestingly while she does put medical instruments into a sterilization solution before they are sent to central supply, she does not operate automated systems to sterilize these instruments, so her answers to question 19.2 and 19.3 would have been different had she answered question 19.3. Eleven respondents properly filtered into this question. All of these respondents answered “no” to this question. Two of these respondents were not familiar with automated systems and therefore they answered “no” to this question. Several of these respondents filtered into this series of questions as they interpreted question 19 as asking about cleaning surfaces. However, when they answered this question they interpreted it as asking about cleaning or sterilizing medical equipment, which they do not do.

19.3.1 Which tasks do you perform to disinfect or sterilize medical equipment or instruments using **automated systems**?

*Please indicate if you perform these tasks listed in the first column of the following table. IF YOU ANSWER ‘YES’ FOR A TASK, please provide answers for how many hours per day and how many days per week, on average, you perform the task, and answer the questions about types of controls.*

Tasks	Do you perform this task?			<u>Hours per day</u>				<u>Days per week</u>			<u>Controls</u>			
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	Is system enclosed?		Is local exhaust used?	
Operate EtO sterilizer	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Operate Plasma H <sub>2</sub> O <sub>2</sub> Sterad <sup>®</sup> system	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Operate H <sub>2</sub> O <sub>2</sub> sterilizer	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Operate Steris <sup>®</sup> system	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Clean or replace equipment screens or filters	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of the questions in this matrix. All respondents should have skipped out of these questions as no respondents answered “yes” to question 19.3. However, two respondents, who answered “no” to question 19.3 missed the skip pattern

following question 19.4 and answered “no” to each item in the matrix. No respondents were probed on these questions.

19.4 Thinking about your current job and what you have done in this job in the last **12 months**: Do you ever **manually** clean, disinfect, or sterilize medical equipment or instruments?

\_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Five respondents who answered “no” to question 19 should have skipped out of this question but answered it anyway. All of these respondents answered “no.” Conversely two respondents who should have answered this question did not provide a response. Only one of these respondents was probed on this question. This respondent indicated that the term “medical equipment” was ambiguous and therefore she did not know how to answer this question. Twelve respondents properly filtered into this question. Five of these respondents answered “no” and seven of these respondents answered “yes.” Respondents who answered “no” interpreted this question as asking if they cleaned or scrubbed medical equipment or instruments in preparation for cleaning at central supply. Because they do not do this they answered “no” to this question. However, upon further discussion during probing two of the respondents thought they may have answered in error. After discussing her interpretation of this question one respondent stated, “I guess I do... a little bit.” She then indicated that she wipes bodily fluids, including blood off of instruments with a gloved hand before placing them in the cleaning solution. It was not clear if this task was meant to be captured by this question. Another respondent, who answered “no” to this question, later thought about how she sterilizes (using wipes) large machines in her work area that don’t get sent out to central supply for sterilization. These include bilirubin lights and other large free standing machines. It was also not clear if this task was meant to be captured by this question. Finally, respondents who answered “yes” to this question interpreted this question as asking if they wipe down or sterilize medical equipment or instruments using their hands. These respondents often sterilized medical equipment and instruments used on patients during physical exams and/or that are left in patients’ rooms. These included such things as scissors, scalpels, IV polls, heart and vital monitors. A couple of respondents also discussed cleaning surfaces in patients’ rooms as a reason for why they answered “yes” to this question. Interestingly one respondent, who interpreted questions 19.2 and 19.3 as asking if they sterilize medical equipment and instruments in a central supply unit, interpreted this question as asking if she cleans equipment in patients’ rooms including IV polls, and vital monitors, which she does. Another respondent who answered “yes” to this question changed her response to “no” during probing. This respondent initially interpreted questions 19.4 and 19.4.1 as asking if she wipes down surfaces in patients’ rooms, which included some equipment like breathing machines or oxygen tanks. After reading question 19.4.1 a second time during probing, she interpreted it as asking if she sterilizes instruments used on patients during examinations, which she does not do. She then changed her response to question 19.4 to “no” and crossed out her responses to question 19.4.1.

19.4.1 For when you **manually** clean, disinfect, or sterilize medical equipment or instruments, please provide answers for how many hours per day and how many days per week, on average, you perform this task.

<u>Hours per day</u>				<u>Days per week</u>		
< 1	1-2	3-4	>4	1	2-3	>3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Two respondents who answered “no” to question 19.4 and should have skipped out of this question provided a response. One respondent indicated that she does this “more than 4 hours a day, more than three days a week” and the other respondent indicated that he does this “3-4 hours a day, more than 3 days a week.” It’s not clear why these respondents answered “no” to question 19.4 but then provided a response to this question as they were not probed on their response. One respondent who did not provide a response to question 19.4 did answer this question. This respondent indicated that she does this “more than 4 hours a day, 1 day a week”; however she was not probed on this question. All seven of the respondents who answered “yes” to question 19.4 provided a response to this question; however one of these respondents did not fill out how many days a week she performs this task. Only two of these respondents were probed on this question. One respondent indicated that he was thinking of the amount of time he spends cleaning IV polls and cleaning containers that waste from colostomy bags are placed in. He performs this cleaning in patients’ rooms. The other respondent who was probed on this question indicated that had initially interpreted both questions 19.4 and 19.4.1 as asking about wiping down surfaces in patients’ rooms, which included some equipment such as breathing machines or oxygen tanks. While she does wipe dust off of these machines she does not sterilize the parts of the machines that touch patients. When she read this question a second time during probing she interpreted it as asking if she sterilizes instruments used on patients during examinations, which she does not do. She then changed her response to question 19.4 to “no” and crossed out her responses to this question.

19.4.2 What percentage of the time do you clean, disinfect, or sterilize medical equipment or instruments using the following methods:

19.4.2.1 Sprays? \_\_\_% of time

19.4.2.2 Wipes or other methods? \_\_\_ % of time

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. One respondent who should have answered these questions skipped over both of them. This respondent was confused by these questions, particularly question 19.4.2.2. She stated during probing that she spends a very small amount of time doing this task and did not know how to calculate it in this way. Another respondent who should have answered these questions only provided a response to question 19.4.2.2, which asked about wipes. This respondent answered “10%” to question 19.4.2.2 but was not probed on his response. One respondent who answered “no” to question 19.4 should have skipped out of this question but instead provided a response. Three respondents who did not provide a response to question 19.4 did answer this question. In total eight respondents provided answers to both of these question and the majority of respondents gave responses to these two questions which did not sum to 100%. Four of these respondents were probed on this question. One respondent indicated that she answered 10% for both questions as she uses sprays and wipes an equal amount of time. Two other respondents whose responses did not sum to 100% provided a smaller response to the type of product they used less. For example one respondent answered “30%” to question 19.4.2.1 which asked about sprays and “100%” to question 19.4.2.2 to indicate that she uses sprays the majority of the time; however she will use sprays on occasion. Conversely the other respondent answered “80%” to question 19.4.2.1 and “50%” to question 19.4.2.2 to indicate that he uses sprays most of the time. Finally one respondent, who answered “45%” to question 19.4.2.1 and “100%” to question 19.4.2.2, was not sure why she initially

answered “45%” to question 19.4.2.1 as she never uses sprays to clean medical equipment or instruments. She then changed her response to question 19.4.2.1 to “0%”.

19.5 Thinking about your current job and what you have done in this job in the last **12 months**:  
Do you ever disinfect or sterilize **dialysis machines**?      \_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. All of the respondents who received this question answered “no.” Four respondents who answered “no” to question 19 should have skipped out of this question but provided a response instead. One respondent who should have answered this question skipped over it. During probing this respondent indicated that she skipped this question by accident and that her answer should have been “no” as she never disinfects dialysis machines. Thirteen respondents filtered themselves into this question correctly. Of these respondents, five were probed on this question. All of these respondents indicated that they do not use dialysis machines in their work unit and/or they never disinfect these machines. A couple of these respondents indicated that these machines are sent to central supply to be sterilized.

19.5.1 For disinfecting **dialysis machines**, please provide answers for how many hours per day and how many days per week, on average, you perform this task, and answer the question about local exhaust ventilation.

<u>Hours per day</u>				<u>Days per week</u>			<u>Controls</u>	
< 1	1-2	3-4	>4	1	2-3	>3	Is local exhaust used?	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

No respondents received this question during the evaluation.

19.6 Thinking about your current job and what you have done in this job in the last **12 months**:  
Do you ever disinfect or sterilize **portable units (for example, IV stands or carts)**?  
\_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents, who should have skipped out of this question as they answered “no” to question 19, provided a response to this question. One of these respondents answered “no” and three answered “yes.” Two of these respondents were probed on this question and both indicated that they were thinking about portable units such as IV polls and blood pressure machines when answering this question. One of these respondents indicated that she never disinfects these and the other respondent indicated that she wipes them down in patients’ rooms. Aside from these respondents 14 respondents filtered into this question correctly. Six of these respondents answered “no” and eight answered “yes.” One respondent who answered “no” was probed on her response to this question. This respondent indicated that she only cleans surfaces such as toilets, sinks, floors and mirrors and never cleans any type of medical equipment. Therefore she answered “no” to this question. Of the respondents who answered “yes” five were probed on their response to this question. These respondents all considered portable units that they wipe down in patient rooms with things like alcohol wipes. The types of portable units these respondents considered included, IV polls, vital machines, pumps, bilirubin lights, as well as surfaces such as medical carts, side tables, and televisions. One respondent who initially answered “yes” to this question later thought she should change her response to “no.” This respondent was unsure on the intent of the term “disinfect.” She said she does wipe down things like television stands and IV polls in patients’



rooms to disinfect them but she doesn't spray them down to disinfect them. For this respondent there was a distinction between wiping something down and spraying it with disinfectant. However, she was not probed enough to determine the source of this distinction.

19.6.1 For disinfecting **portable units**, please provide answers for how many hours per day and how many days per week, on average, you perform this task, and answer the question about local exhaust ventilation

<u>Hours per day</u>				<u>Days per week</u>			<u>Controls</u>	
< 1	1-2	3-4	>4	1	2-3	>3	Is local exhaust used?	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. This question was not probed extensively due to time constraints. Three respondents who should have skipped out of this question because they answered “no” to question 19 provided a response to this question. These respondents were not probed on their interpretation of this question. Eight respondents properly filtered into this question. Of these respondents one respondent did not answer all of the items in the table. This respondent only answered how many hours a day she disinfects portable units. It was not determined through probing why she did not answer the remaining questions. Only two respondents who were probed on this question indicated that they provided estimates in terms on how many hours per day and how many days per week they disinfect portable units. One of these respondents, who answered “less than one hour a day, 2-3 days a week, no exhaust” indicated that this was a “big estimate.” Two respondents indicated that they were not familiar with the term “local exhaust.” One of these respondents marked “no” for this question and the other respondent marked “yes.” The respondent who answered “yes” was the only respondent who answered “yes” to this question. When probed on this she indicated that she didn't know why she marked “yes” to this question because this is not something she uses. She was thinking of an exhaust housekeeping attaches to machines they use when cleaning. Similarly the other respondent who was confused by this term thought of an exhaust used by housekeeping when they wax the floors.

20 Thinking about your current job and what you have done in this job in the last **12 months**:

Do you clean and disinfect surfaces (such as floors, tables, windows, beds, chairs, bathrooms, computers, counter tops) at work with products such as:

- Acids
- Alcohol
- Ammonia
- Bleach/Chlorine (for example, Clorox<sup>®</sup>)
- Chloramines
- Detergents
- Floor wax stripper
- Phenolics (for example, 3M Phenolic Disinfectant 18<sup>®</sup>)

Quaternary ammonium compounds “Quats” (for example, 3M Neutral Quat 23<sup>®</sup>, 3M HB Quat 25<sup>®</sup>, Sani-Cloth Plus<sup>®</sup>)

\_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Similar to question 19, two respondents did not provide a yes/no response to this question but rather checked the products

they use at work. Several other respondents who answered “yes” to this question also marked the products they use at work. Four respondents answered “no” to this question and fifteen respondents answered “yes” to this question. Of the respondents who answered “no” one respondent, who is a nursing assistant, indicated that she never cleans any surfaces while at work. However, two other respondents who answered “no” to this question wanted to change their response to this question during probing. One of these respondents was a nursing assistant and the other respondent was a registered nurse. While cleaning surfaces is not a main part of their jobs, both of these respondents realized that they do clean some surfaces after discussing this question during probing. One respondent indicated that she wipes down surfaces in patients’ rooms using Sani-Cloths. The other respondent indicated that she occasionally cleans counter tops in patients’ rooms if they become soiled and it will be a while before housekeeping can get there. The fourth respondent who answered “no” to this question was not probed on this question. Ten of the respondents who answered “yes” to this question were probed on this question. These respondents were a mix of housekeepers, nursing assistants and one registered nurse. These respondents generally considered cleaning surfaces at work, such as toilets, sinks, showers, floors, beds, chairs, doorknobs, counter tops, and carts. However some respondents also mentioned cleaning medical equipment such as IV polls, blood pressure machines, pulse oximeters, and thermometers. These respondents identified a number of generic and brand name products they use when cleaning surfaces including, bleach, Clorox, ammonia, enzymatic cleaners, detergents, floor wax strippers, Lysol wipes, Lysol spray, Sani-Cloths, Cavi wipes, and Simple Green. One respondent who indicated that she uses detergents was referring to hand soap, which she will take from the bathroom and use to clean up spills on tables in patients’ rooms.

20.1 What are the names of the cleaners/disinfectants you use to clean surfaces? Please write in brand or product names, how many hours a day and how many days a week, you use these cleaners/disinfectants.

Brand or Product Names	<u>Hours per day</u>				<u>Days per week</u>		
	< 1	1-2	3-4	>4	1	2-3	>3
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Many respondents had difficulty answering this question as they could not recall the names of the products they use at work and they had difficulty reporting how often they used these products using the format provided. As a result respondents underreported the number of products they use at work and in some cases respondents over-reported the frequency of which they use the products they listed. These findings are discussed in more detail below.

Five respondents did not provide a response to any of the items. In one case the respondent was not comfortable providing the brand names of the products she uses at work. However, in two of these cases it was determined that these respondents skipped this question

because they did not know the brand names of the products they use at work. In fact, recalling the brand name of the products used to clean at work proved to be a difficult task for many respondents. Several respondents did not list all of the products they used at work. In some cases where respondents had difficulty recalling the brand name of the products they use at work, they listed a mix of brand and generic names, and in a couple of cases respondents only listed the generic names of the products they use. However, in three interviews, the respondents did not know the generic or the brand name of the products they used at work and therefore did not report on these products. They did know however what the products were used for, what the bottles looked like and/or the color of the cleaning solution. One respondent could not recall the name of the wipes she uses at work. However, she read “Sani-Cloth” in the preceding question and thought it sounded familiar. Therefore she answered “Sani-Cloth” for this question but was not 100% sure that this was the name of the product. Finally, one respondent who did not report on all the products she uses at work indicated during probing that she thought this question was asking about products she uses at work in addition to the products listed in question 20. This is a carryover effect from a comprehension problem with question 20. When answering question 20 this respondent thought she was supposed to mark all of the products she uses at work. Therefore when she read this question she thought it was asking her about additional products that were not listed in question 20.

In addition to having difficulty recalling the brand names of the products used at work, these respondents also had difficulty reporting how frequently these use these products using the format provided. There were several reasons for this. In one case the respondent had difficulty reporting how many hours a day she uses Lysol at work. For example when probed on this question, she exclaimed, “I know they’re not saying you do this four hours a day!” This respondent did not select how many hours a day she uses Lysol at work, but instead marked “1” for number of days per week and explained that this meant she used this product every day at work. Another respondent indicated that this was a difficult task because how often he uses these products varies across shifts. The need to use these cleaning products depended on how many patients were treated on a given shift. Another respondent reported using “ammonia” and “bleach” “”more than 4 hours a day, more than 4 days a week; however during probing she indicated that she will either use ammonia or bleach at work and when she uses one of these products she will use it more than 4 hours a day more than 4 days a week. Therefore this was an over-report of the usage of these products. Finally, one respondent only answered how many hours a day she uses Sani-Cloths at work and did not indicate how many days per week she uses this product. When probed on this, she indicated that she thought she could report how many hours or how many days a week she uses these product and did not realize she had to report both. In addition to the difficulties these respondents expressed, we found some respondents may be over-reporting how often they were using cleaning products at work. For example, one respondent who works a 40 hour a week shift, indicated that he uses “Lysol 3-4 hours a day, more than 3 days a week, Clorox 3-4 hours a day, more than 3 days a week, and industrial strength cleaners, 3-4 hours a day, more than 3 days a week.” If this respondent is only using these products 3 hours a day, 4 days a week then he is only using them 36 hours a week; however if he uses them 4 hours a day, 4 days a week than he is using them 48 hours a week.

20.2 What tasks do you perform when cleaning and disinfecting surfaces?

Please indicate if you perform the tasks listed in the first column of the following table.

IF YOU ANSWER 'YES' FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you clean or disinfect surfaces, and the type of gloves used.

Tasks	Do you perform this task?			Hours per day				Days per week			Gloves Worn			
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl	
Manually mix, refill, or empty cleaning or disinfecting products	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean toilet, sink, shower	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spray then wipe glass, windows, mirrors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Polish wood furniture	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Polish stainless steel surfaces	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spray deodorant/disinfectant	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mop floors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleanup spills or blood	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wipe down beds, furniture, counters, walls, computers, etc.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes, answer questions to right & below	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			What percentage of the time when cleaning these surfaces do you use sprays _____ % and wipes _____%.											

*Manually mix, refill, or empty cleaning or disinfecting products*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Nine respondents answered “no” to this question and seven respondents answered “yes.” Instead of answering “no” to this question, one respondent did not provide a response to any of the items, including this one. Respondents were not extensively probed on this question due to time constraints. One respondent who answered “no” to this question does refill hand sanitizer dispensers. It was not clear if this question was intending to capture this type of disinfecting product. Another respondent who answered “no” to this question also marked “more than 3 days a week” and “latex or vinyl gloves.” When probed on this she indicated that she meant to cross off “more than 3 days a week” and “latex or vinyl gloves” as she had initially marked them by accident when responding to this question. Of the respondents who answered “yes” to this question five respondents were probed on their response. Two respondents appeared to provide valid response; however, the other three appeared to have some difficulty with this question. One of the respondents who appeared to provide a valid response answered “yes, less than one hour a day, 2-3 days a week, latex or vinyl gloves. This respondent was considering the time it takes her to mix bleach and a “pine solution” together and the time it takes her to mix disinfecting products which she soaks instruments in prior to sending them to central supply. She indicated that both these tasks take minutes to mix and she mixes these products several times a week. The other respondent who appeared to provide a valid response to this question answered “yes, less than one hour a day, more than 3 days a week.” This respondent refills bottles with cleaning solution. She refills about four different bottles every day and it takes her minutes to do this. Other respondents had more difficulty responding

to this question. One respondent found it difficult to calculate how often he mixes cleaning products at work. He answered “yes, 3-4 hours a day, more than 3 days a week, latex of vinyl.” While he stated he typically does this twice a day (at the beginning and end of his shift), the amount of time he spends doing this varies depending on the tasks that were performed that day. Finally, two respondents provided responses that appeared to be invalid. One of these respondents indicated that he was considering the time it takes to load up his cart with cleaning products, not the amount of time it takes to mix, refill or empty cleaning products. Another respondent who works 25 hours a week, indicated that she spends more than 4 hours a day, 2-3 days a week performing each of the tasks listed in this matrix, with the exception of “cleaning up blood spills” (cleanup spills or blood). This is mathematically impossible. It seems as though this respondent was considering the amount of time she spends in general performing tasks such as the ones listed in the matrix when responding to these question, rather than how much time she spends performing each task independently.

#### *Clean toilet, sink, shower*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Seven respondents answered “no” to this question and nine respondents answered “yes.” Instead of answering “no” to this question, one respondent did not provide a response to any of the items, including this one. Respondents were not extensively probed on this question due to time constraints. Of the respondents who answered “no” to this question, one respondent was probed and she indicated that housekeeping is in charge of this task and this is not something that she ever does while at work. Of the respondents who answered “yes” to this question, three respondents were probed on their response to this question. All three of these respondents had difficulty answering how often they perform this task. These respondents indicated that the time spent cleaning toilets, sinks, and showers could vary across shifts, and the number of patients’ rooms that needed to be cleaned. These respondents used different strategies to deal with this problem. One respondent provided an average, another respondent provided an underestimate, and one respondent left the frequency questions blank. Finally, as with the previous question, a couple of respondents provided responses to this question and the remaining questions that were not mathematically possible given the number of hours they work per week.

#### *Spray then wipe glass, windows, mirrors*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Six respondents answered “no” to this question and nine respondents answered “yes.” Instead of answering “no” to this question, one respondent did not provide a response to any of the items, including this one. Respondents were not extensively probed on this question due to time constraints. Of the respondents who answered “no” to this question, one respondent was probed and she indicated that housekeeping is in charge of this task and this is not something that she ever does while at work. Of the respondents who answered “yes” to this question, three respondents were probed on this question. One of these respondents appeared to provide a valid response. This respondent indicated that she sprays then wipes glass, windows, and mirrors less frequently than she cleans other surfaces at work. Therefore she answered “less than one hour a week, 2-3 days a week.” However, a couple of respondents provided responses that were contradictory to their narratives. These respondents both indicated during their narratives that they performed this task more often than they reported in this question. For example, one respondent answered that he does this 1-2

hours a day but then during probing indicated that she does it 3-4 hours a day. The other respondent indicated that he does this task 2-3 days a week but during probing indicated that he does this every shift (5 days a week). It was not clear why these respondents underreported when answering this question. As with the previous questions, two respondents provided responses to this question and others in the matrix that are mathematically impossible, as they total to more hours than these respondents reported working in a given week. Finally, one respondent marked more than one response for how many hours a day she sprays than wipes glass, windows, or mirrors. This respondent marked “1-2 hours a day” and “more than 4 hours a day”. However, she was not probed on this question so we could not determine why she made this error.

### *Polish wood furniture*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Eleven respondents answered “no” to this question and four respondents answered “yes.” Instead of answering “no” to this question, one respondent did not provide a response to any of the items, including this one and another respondent left this question blank but was not probed to determine why. Respondents were not extensively probed on this question due to time constraints. One respondent who answered “yes” to this question and was probed on his response indicated that he polishes wood furniture in the offices at the hospital where he works but he does not perform this task as often as other tasks such as cleaning bathrooms. He also indicated that how often he polishes wood furniture can vary across shifts. Interestingly though he provided the same response to this question as he did to others in terms of how often he performs this task. That is, he indicated that he polishes wood furniture and cleans toilets, sinks, and showers 1-2 hours a day, more than 3 days a week. One respondent who answered “yes” to this question did not mark how many days a week she spends polishing wood furniture. However, this respondent provided responses to other questions in this matrix that summed up to more hours than she reported working in given week. Likewise, another respondent also answered “more than 4 hours, more than 3 days a week” to multiple items in this matrix, which sums up to more hours than she works in a given week.

### *Polish stainless steel surfaces*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Ten respondents answered “no” to this question and five respondents answered “yes.” Instead of answering “no” to this question, one respondent did not provide a response to any of the items including this one, and another respondent left this question blank but was not probed to determine why. Respondents were not extensively probed on this question due to time constraints. However, there did appear to be some comprehension problems with this question. For example, two respondents indicated that they were not sure if this question was asking about cleaning stainless steel countertops, like those found in examination rooms. These respondents clean these surfaces but because they were unsure of the intent of this question, they answered “no.” Another respondent who answered “no” to this question indicated during probing that she should have answered “yes” as she does clean stainless steel sinks but was not probed on why she initially answered “no.” Of the respondents who answered “yes” to this question one respondent was probed on his response. This respondent indicated that he cleans a lot of stainless steel surfaces in the bathrooms and kitchens of the hospital where he works. He indicated that he does this “3-4 hours a day, more than 3 days a week, wearing latex or vinyl gloves.” Finally as mentioned in the previous questions, two respondents provided responses to this question and other questions in this matrix

that sum to more hours than they work in a given a week, indicating that they are overestimating the amount of time spent performing these tasks.

#### *Spray deodorant/ disinfectant*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Six respondents answered “no” to this question and eleven respondents answered “yes.” Respondents were not probed extensively on this question due to time constraints. One respondent who answered “no” to this question appeared to provide a valid response. This respondent indicated that housekeeping performs this task and she never does this at work. Of the respondents who answered “yes” to this question, five were probed on their responses. Three respondents indicated that spray deodorant/disinfectant to deodorize the air. One of these respondents also indicated that he uses this product to disinfect the air. However, one respondent who answered “yes” to this question indicated that she was thinking of how often she uses disinfectant when answering this question, but not necessarily in the spray form. Her answer was based on how often she uses bleach and “pine” to disinfect surfaces. Finally, as with previous questions, two respondents provided responses to this question and other questions in this matrix that sum to more hours than they work in a given a week, indicating that they are overestimating the amount of time spent performing these tasks.

#### *Mop floors*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Seven respondents answered “no” to this question and eight respondents answered “yes.” Instead of answering “no” to this question, one respondent did not provide a response to any of the items, including this one and another respondent left this question blank but was not probed to determine why. Respondents were not extensively probed on this question due to time constraints. One respondent who answered “no” to this question appeared to provide a valid response. This respondent indicated that housekeeping performs this task and she never does this at work. Another respondent, who answered “no” to this question, also indicated that she never mops floors at work; however she may clean up a spill with paper towels. One respondent who answered “yes” to this question also appeared to provide a valid response. This respondent answered that he does this “more than 4 hours a day, more than 3 days a week” and indicated during probing that this is something he does quite frequently on every shift. However, another respondent who answered “yes” to this question also indicated that he does this task “more than 4 hours a day, more than 3 days a week” discussed how the number of hours he spends doing this can across shifts. Finally, as with previous questions, two respondents provided responses to this question and other questions in this matrix that sum to more hours than they work in a given a week, indicating that they are overestimating the amount of time spent performing these tasks.

#### *Cleanup spills or blood*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Four respondents answered “no” to this question and twelve respondents answered “yes.” Instead of answering “no” to this question, one respondent did not provide a response to any of the items, including this one. Respondents were

not extensively probed on this question due to time constraints. One respondent who answered “no” to this question later indicated during probing that she does clean up blood if it drips on the floor when starting an IV. When asked why she answered “no” to this question she indicated that she was thinking of bigger spills or larger amounts of blood when answering this question. She indicated that housekeeping is called in if it is more than a drop of blood on the floor. Another respondent who answered “no” to this question also marked that she does this “4 hours a day”. However, during probing she indicated that she never cleans up spills or blood so it’s not clear why she answered how many hours a day she performs this task. Of the respondents who answered “yes” to this question, seven were probed on their response. These respondents considered cleaning up a variety of liquids including blood, vomit, benzoin, vinegar, water and sodas. Respondents indicated that they clean these spills up with different things including paper towels, mops, bleach wipes, and a special cleaner for vomit. One respondent who answered “yes” to this question did not indicate how many days a week she spends cleaning up spills or blood or if she wears gloves. During probing she indicated that she may clean up blood if a patient falls and hurts her/himself but it is not something that she does regularly. Finally, as with previous questions, two respondents provided responses to this question and other questions in this matrix that sum to more hours than they work in a given a week, indicating that they are overestimating the amount of time spent performing these tasks.

*Wipe down beds, furniture, counters, walls, computers, etc.*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. One respondent answered “no” to this question and sixteen respondents answered “yes.” This question was not probed on extensively due to time constraints. One respondent did not answer how many hours she spends performing this task. When probed on this she indicated that she was having difficulty calculating how often she wipes down these surfaces but it is something that she does every day at work. Another respondent indicated that she performs this task less than one hour a day but she did not indicate how many days a week she does this or if she wears gloves. It was not clear why she did not answer this item but she indicated during probing that she does this about one day a week. This same respondent was also considering wiping down medication and treatment carts in patients’ rooms. It was not clear if this type of surface should be included in responses to this question or not. Another respondent who marked that she performs this task “less than one hour a day and more than three days a week, wearing nitrile gloves,” later changed her response to wearing latex or vinyl gloves. When probed on this she indicated that she wears nitrile gloves at her part time job. But at her full time job, which she considered when answering these questions, she wears latex gloves. Finally, as with previous questions, two respondents provided responses to this question and other questions in this matrix that sum to more hours than they work in a given a week, indicating that they are overestimating the amount of time spent performing these tasks.

20. 2j What percentage of the time when cleaning these surfaces do you use sprays \_\_\_\_ % and wipes \_\_\_\_%.

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. Four respondents who should have provided a response to this question skipped over it. In one of these cases it was determined that the respondent did not see the question at the bottom of the matrix. Seven respondents provided invalid responses to this question as their responses did not sum up to 100 percent. Some of these respondents reported having difficulty understanding the intent of this question. A couple of



respondents interpreted this question as asking if they use sprays and wipes at work and because they do, they answered 100% for both sprays and wipes. Another respondent interpreted this question as asking about the percentage of time he uses sprays or wipes when at work, not the percentage of time he uses them to clean surfaces. Therefore he answered 10% for sprays and 10% for wipes. Another respondent was not sure whether her responses should total to 100% or not. She answered 80% for sprays and did not report the percentage of the time she uses wipes. Six respondents did provide responses that totaled to 100 percent; however these respondents did not think of wipes in the same way. That is, some respondents considered wipes to be pre-moistened packaged wipes, and other respondents considered a dry rag or sponge that they use to wipe a cleaning product after it has been sprayed on a surface.

**20.3 Thinking about your current job and what you have done in this job in the last 12 months: Do you clean and wax floors using strippers and buffers?**

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of this question. Four respondents skipped out of this question because they answered “no” to question 20. All but three respondents answered “no” to this question. Respondents who answered “no” indicated that they never wax floors at work and that this task is done by a special unit within their workplace or contracted out. Of the respondents who answered “yes,” one respondent discussed waxing floors to be a multi-step process that gets divided up amongst members of his staff. These steps included stripping old wax off the floor, scraping if necessary, putting a solution down that must sit for 24 hours, waxing the floor, and then buffing it. The other respondent who answered “yes” to this question initially answered “no” but then changed his response after reading the following question which asked if prepares to buff floors. He does prepare to buff floors and he thinks that preparing to buff floors and buffing them is the same thing. However, he does not strip floors as this is someone else’s job. Because of this he initially answered “no” to this question. The third respondent who answered “yes” to this question was not probed on his response.

**20.3.1 What tasks do you perform when cleaning and waxing floors using strippers and buffers? Please indicate if you perform the tasks listed in the first column of the following table. IF YOU ANSWER ‘YES’ FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you clean or disinfect surfaces, and the type of gloves used.**

Tasks	Do you perform this task?		If Yes →	Hours per day				Days per week			Gloves Worn		
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
Strip floors	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scrape floors	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepare to buff floors	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buff floors	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wax floors	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. Two respondents who should have skipped out of these questions but missed the skip pattern following question 20.3 and answered “no” to these questions. Three respondents who answered “yes” to question 20.3 provided a response to these questions but only one of these respondents was probed on his responses. This respondent answered “yes, 3-4 hours a day, 1 day a week, latex or vinyl” to all of these questions, which the exception of “buff floors.” For this item he indicated that he doesn’t

wear gloves because he is not in contact with chemicals. When probed on these questions this respondent indicated that he does not wax floors every shift, but instead does this about every 3 months. He described waxing floors as a multi-step process which involves stripping the wax off the floor, scraping wax if necessary, putting a solution down that must sit for 24 hours, waxing the floor, and then buffing it. These tasks are divided up amongst members of his team. The entire process takes 1-2 days for his team to complete. The process by which he waxes floors and the amount of time performing all of the steps involved is not consistent with the formats used in the response options provided. Note that the instruction following this question reads “Please indicate how many hours a day and how many days a week, on average, you clean or disinfect surfaces, and the type of gloves used.” This should be changed to more closely match the question intent.

21 Thinking about your current job and what you have done in this job in the last **12 months**:  
 Do you use chemicals or solvents at work in the laboratory?  
 \_\_\_ No \_\_\_ Yes  
 IF ‘NO’: GO TO QUESTION 22  
 IF ‘YES’: CONTINUE WITH QUESTION 21.1

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. All respondents answered “no” to this question. When probed on why they answered “no” respondents often indicated that they do not work or clean in a laboratory. When probed on their interpretation of laboratory many respondents thought this referred to a unit that performs medical tests such as testing blood samples, urine, vaginal or other types of specimens.

21.1 What are the names of the chemicals or solvents you use in laboratories?  
 Please write in brand or product names, how many hours a day and how many days a week, you use these substances.

No respondents received this question during testing.

21.2 What tasks and tools do you use when you apply or use these chemicals or solvents?  
 Please indicate how many hours a day and how many days a week, on average, you apply or use these chemicals or solvents or metals, and the type of controls present.

Tasks	Do you perform this task?			Hours per day				Days per week			Controls			
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	Is system enclosed?		Is local exhaust used?	
Pipette samples or solutions	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Place biopsy in formalin	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Prepare formalin neutralizer	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Test blood sample	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Cut tissue samples	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Prepare and fill stainer	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

All respondents should have skipped out of these questions as they all answered “no” to question 21; however three respondents answered “no” to all *Pipette samples or solutions*, two respondents answered “no” to *Place biopsy in formalin*, two respondents answered “no” to *Prepare formalin neutralizer*, two respondents answered “no” to *test blood samples*, two respondents answered “no” to *cut tissue samples*, and two respondents answered “no” to *Prepare and fill stainer*. These respondents were not probed on these questions.

22. Thinking about your current job and what you have done in this job in the last **12 months**: Do you use chemicals, adhesives, alcohols or solvents (such as super glue, alcohols, alcohol preps, mineral spirits, toluene, solutions to remove adhesives) at work **on patients**?  
\_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. Fifteen respondents answered “no” to this question and six respondents answered “yes.” Of the respondents who answered “no” five respondents have no contact with patients at work and the only contact one respondent has is when she is helping bathe, dress, and feed the patients. A couple of respondents who answered “no” to this question felt that the questions were getting repetitive and answered “no” to this question without fully reading it. Upon probing one of these respondents indicated that she has no contact with patients; however the other respondent does use alcohol preps on patients before doing finger stick and Band-Aids. After reading the question a second time during probing she indicated that she was still unsure if these were the types of products that this question intended to capture. Other respondents also had difficulty comprehending the intent of this question. For example, another respondent who answered “no” to this question indicated during probing that she does use alcohol wipes, benzoin tincture and adhesives (preapplied adhesive on ostomy bags) on patients. Another respondent, who answered “no” to this question, indicated that she did so because she interpreted this question as asking if she uses any of the products listed to remove adhesives from patients, which she does not do. It appears that this respondent was focusing on the phrase “to remove adhesives” in the example given and applying this to the entire question. This respondent does use Tegaderm as an adhesive to help keep IVs in place and alcohol wipes on patients. Finally, one respondent who answered “no” to this question was unsure how to answer this question as she works two jobs and she only uses these products at her part-time job. Because she was considering her full time job when answering the preceding questions, she continued to consider this job when answering this question.

Misinterpretations of this question were not isolated to those who answered “no.” A couple of respondents who answered “yes” also had difficulty comprehending the intent of this question. For example, one respondent who answered “yes” indicated that she did so because she wears gloves at work. It’s not clear why she interpreted this question in this way but she also interpreted the following question in the same manner and wrote “wear sterilized gloves” in as a response. Upon probing it was determined that she uses alcohol wipes and benzoin tincture on patients but she did not consider these products until reading this question a second time during probing. Another respondent interpreted this question as asking about disinfecting products only. While she did provide a valid response because she uses alcohol wipes on patients, she did not consider other products she uses on patients such as adhesives when answering. After reading the question a second time during probing she read all of the examples provided and realized she had misinterpreted the intent of the question. The remaining respondents who answered “yes” to this question did so because they use alcohol preps, alcohol swabs, benzoin tincture, solutions to remove DuoDERM patches, adhesive tape, adhesive patches, and an adhesive used prior to applying ostomy bags. Finally, both respondents who answered “yes” and “no” to this question indicated that they were not familiar with the terms mineral spirits and toluene.

22.1 What are the names of the chemicals/adhesives/alcohols/solvents you use on patients? *Please write in brand or product names, how many hours a day and how many days a week, you use these chemicals, adhesives, alcohols, or solvents with patients*

Brand or Product Names	Hours per day				Days per week		
	< 1	1-2	3-4	>4	1	2-3	>3
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. Six respondents should have answered this question as they answered “yes” to question 22; however one respondent left this question blank. The respondent who did not answer this question indicated that she did not know the brand names of the products she uses on patients. When asked how she knows what to use on patients she said “They’re in labeled bins. They are different colors. So I know benzoin tincture is purple... when you use something every day and you know where it is, you just kind of grab it.” This respondent did know the generic names of the products she uses but not the brand names. Other respondents also had difficulty recalling the names of the products they use on patients. One respondent wrote a question mark in the answer space because she didn’t know the brand names of the products she uses (alcohol wipes and benzoin tincture). Note that she then marked “less than one hour, 1 day a week” and indicated that this was to report how often she uses both alcohol wipes and benzoin tincture. Another respondent also did not appear to know the name of the product she uses. Instead she wrote in “for ostomy bag” and marked “less than one hour, 1 day a week.” Other respondents just wrote in the generic names of the products they used, such as alcohol preps, adhesives, and isopropyl alcohol. One of these respondents commented that the brands used by a hospital could change week to week and this is why she doesn’t know the brand names of the products. In addition to the respondent above who gave one response for two products, another respondent did not include all of the products she uses at work in her response. When probed on this she indicated that she thought this question was only asking about disinfecting products, which is why she only answered “isopropyl alcohol.” However, after reading this question and the previous question a second time during probing she wanted to include benzoin tincture in her response. One respondent also had difficulty calculating how she uses these products when answering this question. This respondent indicated that how much she uses alcohol preps can vary shift to shift depending on how many patients need care. Finally one respondent misinterpreted this question completely. This respondent answered “sterilize gloves, blue gloves.” It was not determined why she initially gave this response but after some probing it was determined that she does use alcohol wipes and benzoin tincture more than four hours a day, more than 3 days a week.

22.2 What tasks do you perform when you apply or use chemicals, adhesives, alcohols, or solvents on patients?

*Please indicate if you perform the tasks listed in the first column of the following table.*

*IF YOU ANSWER ‘YES’ FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you use chemicals, adhesives, alcohols or solvents at work on patients?”*

Tasks	Do you perform this task?		If Yes →	Hours per day				Days per week			Gloves Worn		
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
Apply disinfectant with gauze or swab	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spray disinfectant	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean wounds	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply adhesive for ostomy bags	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply benzoin tincture	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### *Apply disinfectant with gauze or swab*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. One respondent answered “no” to this question, three respondents answered “yes” and answered the subsequent questions, and three respondents did not provide a response. One of the respondents who did not answer this question only answered the third item “clean wounds” and left the rest of the matrix blank. It was not clear why she did this but upon probing she indicated that she does apply disinfectant to patients when cleaning wounds. The two other respondents who did not respond to this question were confused by this question as they both interpreted the term “disinfectant” as referring to cleaning products such as Lysol. Both respondents seemed perplexed by the idea of using these products on patients and thus did not answer this question. However, both of these respondents used disinfectants such as alcohol on patients. Similar to these respondents, another respondent also interpreted this question as asking about using cleaning products at work. This respondent answered “yes” as she uses disinfectants such as air deodorizing spray at work but not on patients. One respondent had difficulty reporting how often she performs this task. This respondent found it easy to recall how many times a day she performs this task but not how many hours she spends doing it. Finally, two respondents answered “yes” to this question and had no difficulty answering how often they perform this task. One respondent considered how often she uses disinfectants to clean wounds and the other respondent considered how often she uses alcohol wipes when starting IVs on patients.

### *Spray disinfectant*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. Three respondents answered “no” to this question, one respondent answered “yes” and answered the subsequent questions, and three respondents did not provide a response. Respondents were not extensively probed on this question due to time constraints. However, one respondent commented that she did not know what was meant by “spray disinfectant.”

### *Clean wounds*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. One respondent answered “no” to this question, four respondents answered “yes” and answered the subsequent questions, and one

respondent did not provide a response. The respondent who did not answer this question should have answered “no” as she does not clean wounds at work. When answering this question she did not see the box for “no.” Of the respondents who answered “yes” to this question several respondents had difficulty answering how often they perform this task. These respondents could think of how many days a week they perform this task or how many times a day they perform this task but had difficulty calculating how many hours they spend doing it. These respondents often indicated that the time spent cleaning a wound could vary greatly depending on the nature of the wound. Some of these respondents thought they overestimated the number of hours they spend performing this task a day.

#### *Apply adhesive for ostomy bags*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. Two respondents answered “no” to this question, two respondents answered “yes” and answered the subsequent questions, and two respondents did not provide a response. Of the two respondents who did not provide a response to this question, one respondent indicated during probing that she should have answered “yes” and the other respondent indicated that she should have answered “no.” Both respondents indicated that they did not read this question fully when answering it. The other respondents were not probed extensively on this question due to time constraints. One respondent, who answered “yes” to this question and indicated that she does this “less than our hour a day, 1 day per week, wearing nitrile gloves” indicated that she will apply adhesive around the ostomy area to ensure the bag sticks to the body.

#### *Apply benzoin tincture*

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. One respondent answered “no” to this question, four respondents answered “yes” and answered the subsequent questions, and one respondent did not provide a response. The respondent who did not answer this question indicated during probing that she was not familiar with the term “benzoin tincture.” Respondents were not probed extensively on this question due to time constraints; however several respondents indicated that how often they apply benzoin tincture could vary week to week depending on patient needs. Respondents reported using benzoin tincture as an adhesive for Texas Caths, steristrips on c-sections and to clean wounds.

23 Thinking about your current job and what you have done in this job in the last **12 months**: Do you administer aerosolized medications such as antibiotics (for example, Tobramycin, Amikacin, or Colistin), pentamidine (for example, Nebupent®), ribavirin, bronchodilators, anesthetics, antitrypsin)?

\_\_\_ No \_\_\_ Yes

Data from three respondents who were determined ineligible to participate in the evaluation were excluded from the analysis of these questions. One respondent did not provide a response to this question and all but one of the remaining respondents answered “no.” The respondent who did not answer this question did not know if she should consider her full-time job or her part-time job when answering this question. She does not administer these medications at her full-time job; however she does administer them at her part-time job. She indicated that she uses bronchodilators on patients at least 2-3 times per shift but this could vary depending on the weather and the number of patients she treats. Some respondents who answered “no” to this

question indicated that they never administer these types of medications and several mentioned that this is a task performed by respiratory therapists. Some respondents who answered “no” indicated that they had no contact with patients whatsoever. However, other respondents who answered “no” indicated that they were not familiar with the term “aerosolized medications.” Some respondents inferred that these were medications used to treat asthma or other respiratory problems by reading the content of the remaining questions in this section. Additionally one respondent who answered “no” to this question indicated that she vacillated between answering yes and no. This is because she is not certified to administer these types of medications to patients. However she will measure out the dosage and another nurse will administer them to the patient. Finally, the one respondent who answered “yes” to this question indicated that she was not familiar with the term “aerosolized.” However because she administers antibiotics to patients in a pill and liquid form and antibiotics were listed in the question, she answered “yes” to this question.

23.1 What are the names of the aerosolized medications you administer?

Please write in brand or product names, how many hours a day and how many days a week, you administer aerosolized medications

Brand or Product Names	Hours per day				Days per week		
	< 1	1-2	3-4	>4	1	2-3	>3
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Only one respondent answered this question. This respondent answered “Albuterol; less than one hour a day; 2-3 days a week.” She was not probed on her response.

23.2 What tasks and tools do you use to administer aerosolized medications?

Please indicate if you perform the tasks listed in the first column of the following table.

IF YOU ANSWER ‘YES’ FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you clean or disinfect surfaces, and the type of gloves used.

Tasks	Do you perform this task?		If Yes →	Hours per day				Days per week			Gloves Worn		
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
Manage patients on ventilators or oxygen	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teach use of metered-dose inhalers or nebulizers	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply nebulizer therapy using:	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
hand pumps?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
automated enclosed system?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Manage patients on ventilators or oxygen

Two respondents answered this question. One respondent should have skipped out because she answered “no” to question 23. This respondent answered “yes; less than one hour a day; one day a week; latex.” She was not probed on his response. The other respondent who answered this question properly filtered into this question. She answered “yes, less than one hour a day, 2-3 days a week; latex or vinyl.” She was not probed on her response.

*Teach use of metered-dose inhalers or nebulizers*

Two respondents answered this question. One respondent should have skipped out because she answered “no” to question 23. This respondent answered “yes; less than one hour a day; one day a week; latex.” She was not probed on his response. The other respondent who answered this question properly filtered into this question. She answered “yes, less than one hour a day, 2-3 days a week; latex or vinyl.” She was not probed on her response.

*Apply nebulizer therapy using:  
hand pump  
automated enclosed system*

Note that there is an extra row of responses in the matrix between items *Teach use of metered-dose inhalers or nebulizers* and *Apply nebulizer therapy using: hand pump*. Two respondents answered this question. One respondent should have provided a response to this item and the following item (*automated enclosed system*) but skipped over both of these items when answering. This respondent was not probed on these items.

24. Were you employed 5 years ago?    \_\_\_ No \_\_\_ Yes

One respondent answered “no,” twenty-one respondents answered “yes,” one respondent did not provide a response and one respondent was asked to skip to the demographic questions due to time constraints. The respondent who did not answer this question skipped over this question by mistake. She should have answered “yes” to this question as she has worked in the same nursing home for the last five years. The respondent, who answered “no” to this question, indicated that she was on disability five years ago. Of the respondents who answered “yes” to this question, fifteen were probed on where they were working five years ago. Four of these respondents were working in the current job five years ago, six respondents were working in a health care setting (i.e., nursing homes, hospitals, or as a home health aide), and five respondents were not working in a health care setting. Finally, one respondent who answered “yes” should have skipped out of this question as he answered “no” to question 12.1.

24.1 What was your employment status 5 years ago?

- \_\_\_ Disabled
- \_\_\_ On family leave
- \_\_\_ On extended sick leave
- \_\_\_ Retired
- \_\_\_ Student
- \_\_\_ Other, please specify:

Only one respondent answered this question. This respondent answered “disabled.” She was on disability because of mental health problems. She is no longer receiving disability.

24.2 Five years ago, were you working in the same job that you already reported as your current job? ‘Same job’ means both the occupation code and unit code are the same.



\_\_\_ No \_\_\_ Yes

Fourteen respondents answered “no” to this question, six respondents answered “yes,” one respondent did not provide a response to this question and another respondent was asked to skip to the demographic questions due to time constraints. For the most part respondents interpreted and answered this question correctly. That is, most respondents who answered “no” indicated that they were working in a different occupation and/or unit five years ago and most respondents who answered “yes” were working in the same occupation and unit five years ago. However, a couple of respondents had difficulty provide a response to this question. As mentioned above one respondent did not provide a response to this question. Instead this respondent wrote in a question mark. Unfortunately this respondent was not probed on this question. Another respondent did not know how to answer this question as she worked in a different occupation but in the same unit. Because of this she did not know if she should answer yes or no to this question. One respondent who answered “no” should have skipped out of this question as he answered “no” to question 12.1. Finally, one respondent who answered “yes” indicated during probing that she wanted to change her response to “no.” This respondent initially answered “yes” because she works in the same type of facility – a nursing home – five years ago; however her occupation was different. After reading the question a second time during probing she realized her response should have been “no.”

25. Use the lists below to identify the 2-digit occupation code for the job you had 5 years ago and the 2-digit unit code for where the job was located.

*If you had more than one job 5 years ago, record information for job where you worked the most hours per week.*

25.1 What was your occupation 5 years ago?

\_\_\_ \_\_\_  
Occupation code

**List of 2-digit occupation codes**

*Please select single best code for the job you had 5 years ago and record above.*

- 01:** Disinfecting or sterilizing technician or technologist
- 02:** Housekeeper, cleaner
- 03:** Lab technician, technologist, or assistant in a medical or clinical laboratory
- 04:** Nursing assistant or orderly
- 05 :** Nurse (RN, LPN)
- 06:** Nurse practitioner
- 07:** Respiratory therapist or respiratory technician
- 08:** Ward clerk
- 09:** Other, please specify

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Two respondents answered “02 Housekeeper, cleaner,” one respondent answered “03 Lab technician, technologist, or assistant in a medical or clinical laboratory,” three respondents answered “04 Nursing assistant or orderly,” three respondents answered “05 Nurse (RN, LPN)” and eight respondents answered “09 Other, please specify.” One respondent was asked to skip to demographics due to time constraints. Two respondents who answered this question should have skipped out of it but missed the skip pattern following question 24.2. Both of these respondents answered “02 Housekeeper, cleaner.” Another respondent who was confused by question 24.2 did not provide a response to that question or this one. The respondent who answered “03 Lab

technician, technologist, or assistant in a medical or clinical laboratory” was unsure how to answer this question. This respondent worked as a nursing assistant five years ago. However she was also a trained phlebotomist and one of her duties in her previous job was drawing blood. Because of this she considered herself to be both a nursing assistant and a lab technician. She ultimately answered “03 Lab technician, technologist, or assistant in a medical or clinical laboratory.” The three respondents who answered “04 Nursing assistant” indicated that they would describe their job titles five years ago as “nursing aide,” “certified nursing aide,” and “support assistant.” The respondent who described her occupation as a support assistant indicated that she performed all noninvasive procedures on patients, including checking vitals and starting IVs. Two of the respondents who answered “05 Nurse (RN, LPN)” described their occupation five years ago as “registered nurse” and the third respondent who answered “05 Nurse (RN, LPN) described her occupation as “staff nurse.” Finally, the respondents who answered “09 Other, please specify” all worked in non-health care settings and described their occupations five years ago as “customer service,” “administrative assistant,” “telemarketer,” “warehouse assistant,” and “telephone operator.” One respondent who answered “09 Other, please specify” did not write in a response but when probed on this indicated that she was a teacher.

25.2 In which unit did you work 5 years ago?

\_\_\_\_\_  
Unit code

**List of 2-digit unit codes**

*Please select single best code for the unit where you worked 5 years ago and record above.*

- 01:** in hospital, administration
- 02:** in hospital, dialysis
- 03:** in hospital, education
- 04:** in hospital, emergency room (ER)
- 05:** in hospital, endoscopy
- 06:** in hospital, float
- 07:** in hospital, general or internal medicine
- 08:** in hospital, intensive care
- 09:** in hospital, outpatient care
- 10:** in hospital, pediatric
- 11:** in hospital, psychiatric
- 12:** in hospital, pulmonary
- 13:** in hospital, surgery or operating room
- 14:** outside hospital
- 15:** Other, please specify

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One respondent answered “03 in hospital, education,” two respondents answered “07 in hospital, general or internal medicine,” one respondent answered “09 in hospital, outpatient care,” one respondent answered “10 in hospital, pediatric,” and ten respondents answered “15 other, please specify.” Three respondents who should have answered this question skipped over it and two respondents who should have skipped out of it provided a response. One respondent was instructed to skip to the demographic section due to time constraints. Several respondents had difficulty providing a response to this question. This was due to the fact that some

respondents did not work in health care settings five years ago, and other respondents worked in health care settings that were not represented in the list of response options.

The three respondents who did not provide a response to this question did so for different reasons. One respondent who did not answer this question was confused by question 24.2 and thus did not answer any questions regarding her employment five years ago. Another respondent who did not provide a response to this question did not work in a health care setting five years ago and because all of the response options referred to these types of settings she did not provide a response. The third respondent who did not provide a response to this question did not think she had to provide a response. She felt her response to question 25.1, which indicated that she worked in a non-health care setting, was sufficient enough. In addition to the problems these respondents experienced when answering this question, two other respondents provided invalid responses. One respondent answered “07 in hospital, internal medicine” however upon probing she indicated that she worked in a neuroscience unit of a hospital. She indicated that she selected the response she did because they treated all types of patients and problems in her unit but mainly they treated stroke victims. Another respondent answered “09 in hospital, outpatient care” however when probed on this question he revealed that he actually worked as a home health aide and not in a hospital. It appears he was adhering to “outpatient care” when selecting his response. As mentioned above the most common response selected by respondents was “other, please specify.” Respondents who selected this response wrote in a variety of work settings including, condominium complex, computer company, temp agency, nursing home, housekeeping, maternal postpartum care, and two respondents wrote in non-medical field. While these responses all appeared to be valid, two respondents who worked in nursing homes answered this question and question 13.2 inconsistently. That is, when asked about the unit they worked in five years ago these respondents answered “other” but when asked about the unit they currently work in these respondents marked “outside hospital” to indicate they work in a nursing home. These response options need to be clarified in order to improve validity of the responses.

26 How many hours per week did you work in the job you had 5 years ago?  
\_\_ \_\_ hours per week

Seventeen respondents answered this question. One respondent skipped this question by mistake, and two other respondents who should have skipped this question provided a response. One respondent was asked to skip to the demographic section due to time constraints. The majority of respondents who answered this question indicated that they worked 40 hours a week five years ago. Many respondents had a consistent schedule five years ago but some respondents indicated that their schedule could vary. These respondents, whose schedules varied, were often able to work over time. When answering this question these respondents typically provided the minimum number of hours they worked a week and not the average.

27 What year did you begin that job? \_\_ \_\_ \_\_ \_\_

Seventeen respondents answered this question. One respondent skipped this question by mistake, and two other respondents who should have skipped this question provided a response. One respondent was asked to skip to the demographic section due to time constraints. Some respondents had no difficulty answering this question as the information was easy for them to recall. In some cases these respondents simply recalled the year. In other cases respondents associated starting this job with other life events, such as moves and births of family members. Other respondents had records of this date, such as one respondent who brought his resume to the interview and another respondent who has an award hung on her wall at home that she received the year she began this job. However, some respondents did have difficulty recalling

this information. For example, one respondent could not recall this information and provided an estimate. A couple of other respondents provided answers that were clearly not valid. For example, one respondent answered “2009.” However given that the interview took place in 2012, she couldn’t have been working at that job five years ago. Another respondent answered the year she started working full time at her job, which was after she completed school; however she worked at this job part time prior to that. Finally, one respondent indicated that she started this job in 1996 but then stated during probing that she started a housekeeping job in a hotel in 1996 but five years ago began a job as a housekeeper at a nursing home.

28 What year did you stop working in that job?    \_ \_ \_ \_

Seventeen respondents answered this question. One respondent skipped this question by mistake, and two other respondents who should have skipped this question provided a response. One respondent was asked to skip to the demographic section due to time constraints. Many respondents were not probed on this question due to time constraints; however, as with the previous question, some respondents found this question easy to answer as they could recall the year they left this job. Some respondents associated the year they left this job with other life events, such as beginning school, birthdays, or losing a job. One respondent brought his resume to the interview and referred to it when answering this question.

29 Were you regularly exposed to vapors, gases, dust, or fumes in that job?  
\_\_\_ No    \_\_\_ Yes

Fifteen respondents answered “no” to this question and two respondents answered “yes.” One respondent skipped over this question as she was unsure how to answer question 24.2 and skipped the remaining questions in this section. One respondent was asked to skip to the demographic section due to time constraints. Most respondents were not probed on this question. However, one respondent who answered “no” was unsure whether or not she should answer yes to this question. She indicated that there was a dusty storage closet at her past job which she frequently accesses. She was not sure if this type of experience was intended to be captured with this question. Therefore she answered “no.” One respondent who answered “yes” to this question indicated that she was exposed to vapors from respiratory medicine as well as fumes and dust coming through the ventilation system from the outside. This respondent discussed how there was a helicopter pad outside of the wing of the hospital where she worked and fumes and dust would filter through the ventilation system more often on days when a helicopter was present. Finally, the other respondent who answered “yes” was not probed on this question; however she circled dust in this question to indicate she was exposed to dust in her old workplace.

30 Thinking about the job you had 5 years ago, did you clean medical equipment or instruments with disinfectants or sterilants such as the following chemicals (and commercial products)

- Acetic acid
- Alcohol
- Bleach or bleach solution (for example, Clorox<sup>®</sup>)
- Ethylene oxide or EtO
- Formaldehyde
- Glutaraldehyde (for example, Cidex<sup>®</sup>, ColdSport<sup>®</sup>, Endocide<sup>®</sup>, Glutacide<sup>®</sup>, Hospex<sup>®</sup>, Metricide<sup>®</sup>, Onicide<sup>®</sup>, Rapicide<sup>®</sup>, Sonacide<sup>®</sup>, Sporocidin<sup>®</sup>, Wavicide<sup>®</sup>)
- Hydrogen peroxide (for example, Accell<sup>®</sup>, Optim<sup>®</sup>, Sporox<sup>®</sup>)
- Hydrogen peroxide gas plasma (for example, Sterad<sup>®</sup> system)
- Ortho-phthalaldehyde (for example, Cidex OPA<sup>®</sup>)

- Peracetic acid (for example, Steris<sup>®</sup> system)
- Hydrogen peroxide and peracetic acid (for example, Acecide<sup>®</sup>, Metrex<sup>®</sup>, Peract<sup>®</sup>)

No  Yes

Twelve respondents answered “no” and five respondents answered “yes” to this question. One respondent skipped over this question as she was unsure how to answer question 24.2 and skipped the remaining questions in this section. One respondent was asked to skip to the demographic section due to time constraints. Many of the respondents who answered “no” to this question did not work in a medical setting five years ago. If they did, they often indicated that they never cleaned any type of medical equipment at their previous job. However, one respondent who answered “no” indicated during probing that she should have answered “yes” to this question. This respondent misinterpreted this question when she read it a second time during probing. She stated that she should have answered yes as she used to clean bathrooms using ammonia, detergents and some of the other chemicals listed in this question. Respondents who answered “yes” to this question also misinterpreted the intent of this question. When probed on this question, these respondents indicated that they cleaned medical equipment in patients’ rooms such as blood pressure machines, IV pumps, stethoscopes, metal trachs using chemicals such as alcohol, bleach, and hydrogen peroxide. Finally, as with earlier questions which asked about cleaning with disinfectants and sterilants several respondents selected the types of products used when answering this question.

30.1 In the process of disinfecting or sterilizing medical equipment or instruments, did you use an enzymatic cleaner as well?  No  Yes  Don’t Know

Ten respondents answered “no,” two respondents answered “yes” and two respondents answered “don’t know.” One respondent did not respond to this question. Instead she wrote in “skip” as she felt this question was not relevant to her previous employment as a telemarketer. Similarly, another respondent wrote in “N/A” and told the interviewer she should have been skipped out of this question as she responded “no” to question 30. Two other respondents also skipped over this question. One respondent was instructed to skip to the demographic section due to time constraints. Like the respondents mentioned above other respondents who answered “no” to this question felt they should have skipped out of this question because they answered “no” to question 30. One respondent who answered “no” to this question indicated that he has never heard of enzymatic cleaners before. Another respondent who answered “no” later wanted to change her response to yes. After reading this question a second time during probing she recalled using these types of cleaners at work. But it was not determined through probing what she cleaned with these products. Only one respondent who answered “yes” to this question was probed on this question. This respondent indicated that she answered “yes” to this question because she used peroxide to clean trachs.

31 Thinking about the job you had 5 years ago, did you clean surfaces (such as floors, tables, windows, beds, chairs, bathroom) at work with cleaners or disinfectants such as bleach/chlorine, ammonia, chloramines, quats, phenolics, floor stripper, acids, or detergents?

Six respondents answered “no” to this question and eleven respondents answered “yes.” One respondent did not answer this question and another respondent was instructed to skip to the demographic section due to time constraints. Most respondents were not probed on this question. However, some respondents who answered “yes” indicated that they cleaned surfaces such as chairs, beds, tables, tile and metal surfaces, bathrooms, computer and keyboards with products such as bleach and ammonia.

32 Thinking about the job you had 5 years ago, did you observe any of the following in the building where you worked?

32.1 Water leakage or water damage indoors on walls, floors, or ceilings?  No  Yes

Thirteen respondents answered “no” and four respondents answered “yes” to this question. One respondent did not answer this question and another respondent was instructed to skip to the demographic section due to time constraints. Many respondents were not probed on this question. However, all of the respondents who answered “yes” to this question indicated during probing that they saw water leaking in their previous place of employment. These leaks were caused by rain and leaking pipes.

32.2 Visible mold growth (not on food) indoors on walls, floors, or ceilings?  No  Yes

Sixteen respondents answered “no” to this question and one respondent answered “yes.” One respondent did not answer this question and another respondent was instructed to skip to the demographic section due to time constraints. Most respondents were not probed on this question due to time constraints. However, a couple of respondents who answered “no” indicated that they never saw any signs of mold at the previous place of employment. The one respondent who answered “yes” indicated that she saw mold growing on the wall behind a door where there was water damage.

32.3 Odor of mold or mildew (not from food)?  No  Yes

Sixteen respondents answered “no” to this question and one respondent answered “yes.” One respondent did not answer this question and another respondent was instructed to skip to the demographic section due to time constraints. Most respondents were not probed on this question due to time constraints. However, a couple of respondents who answered “no” indicated that they never smelled an odor of mold or mildew at the previous place of employment. The one respondent who answered “yes” indicated that there was an odor coming from the mold growing on a wall in her previous place of employment.

33 Thinking about the job you had 5 years ago, were there renovations or construction at your job?  No  Yes

Ten respondents answered “no” and six respondents answered “yes” to this question. One respondent did not answer this question and another respondent was instructed to skip to the demographic section due to time constraints. Most respondents were not probed on this question due to time constraints. However, a couple of respondents who answered “no” to this question indicated that they never knew of any renovations or constructions occurring at the job they had five years ago. One respondent who answered “yes” to this question indicated that there was construction occurring “across the street” from where she worked. Another respondent who answered “yes” to this question indicated that there were ongoing renovations on the inside and outside of her previous place of employment. This included renovating whole wings of the hospital, ripping up floors and repairing and painting dry wall in patients’ rooms.

34 Have you ever had to change or leave a job or position because it affected your breathing?

This would include changing jobs or positions within the same workplace.

No  Yes

Twenty-two respondents answered “no” to this question and one respondent answered “yes.” One respondent was instructed to skip to the demographic section due to time constraints. Respondents who answered “no” indicated during probing that they never had any breathing problems at work. One woman who reported being sensitive to spray medications indicated that she asks her coworkers to use these on patients so she doesn’t have to be exposed to it. The one respondent who answered “yes” was not probed on this question.

***IF ‘YES’:*** *If you have changed or left a job or position more than once because it affected your breathing, please answer the following questions about the most recent time this happened.*

34.1 In which year did you change or leave this job or position?   \_\_\_ \_\_\_ \_\_\_ \_\_\_

Only one respondent should have answered this question; however this respondent skipped over this question and she was not probed on this question.

34.2 *Concerning the job or position you changed or left:*

34.2.1 What kind of job or position did you change or leave?

\_\_\_\_\_

Only one respondent should have answered this question; however this respondent skipped over this question and she was not probed on this question.

34.2.2 In what industry was this job or position you changed or left?

\_\_\_\_\_

Only one respondent should have answered this question; however this respondent skipped over this question and she was not probed on this question.

34.2.3 What had you done in the job or position you changed or left?

\_\_\_\_\_

Only one respondent should have answered this question; however this respondent skipped over this question and she was not probed on this question.

34.2.4 What exposure or activity affected your breathing in the job or position you changed or left?

\_\_\_\_\_

Only one respondent should have answered this question; however this respondent skipped over this question and she was not probed on this question.

34.3 *Concerning the job or position you went to:*

34.3.1 What kind of job or position did you go to?

\_\_\_\_\_

Only one respondent answered this question. This respondent answered “nursing aide.” However she was not probed on this question.

34.3.2 In what industry was the job or position you went to?

\_\_\_\_\_

Only one respondent answered this question. This respondent answered “Southern Maryland.” However she was not probed on this question.

34.3.3 What did you do in this new job or position?

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Only one respondent answered this question. This respondent answered “patient care tech.” However she was not probed on this question.



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Appendix: Instrument used during testing.

You have been selected from among members of the SEIU (Service Employees International Union) Health Care Workers East (Local 1199) to complete this survey on respiratory health. Please answer questions using an X or check mark ✓ to record your responses.

**Medical History**

1 Have you **ever** had any of the following medical conditions?

- 1.1 Chronic obstructive pulmonary disease, or COPD  No  Yes
- 1.2 Emphysema  No  Yes
- 1.3 Nasal or sinus allergies, including hay fever  No  Yes
- 1.4 Eczema or any kind of skin allergy  No  Yes
- 1.5 Allergies to animals  No  Yes
- 1.6 Allergies to dust or dust mites  No  Yes
- 1.7 Allergies to latex or latex-containing products (ace bandages/adhesive tape/gloves)  No  Yes

2 Has your **biological mother** had the following medical conditions?

- 2.1 Asthma?  No  Yes  Don't Know
- 2.2 Hay fever, eczema, or skin allergies?  No  Yes  Don't Know

3 Has your **biological father** had the following medical conditions?

- 3.1 Asthma?  No  Yes  Don't Know
- 3.2 Hay fever, eczema, or skin allergies?  No  Yes  Don't Know

**Home**

The following questions are about the house or apartment where you currently live.

4 In the last **12 months**, have you observed any of the following in your house or apartment?

- 4.1 Water leakage or water damage indoors on walls, floors, or ceilings?  No  Yes
- 4.2 Visible mold growth (not on food) indoors on walls, floors, or ceilings?  No  Yes
- 4.3 Odor of mold or mildew (not from food)?  No  Yes

5 In the last **12 months**, have there been any renovations or construction in your house or apartment?

- No  Yes

6 In the last **12 months**, how often have you personally cleaned your own home?

- |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|
| Never                    | Less than                | 1-3 days                 | 4-7 days                 |
|                          | 1 day / week             | / week                   | / week                   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**IF 'NEVER': Go to Question 9**

**IF ANY ANSWER OTHER THAN 'NEVER': Go to Question 7**

7 In the last **12 months**, on how many days a week have you used the following cleaning products in your own home? *Mark the single best answer for each cleaning product.*

	Never	Less than 1 day / week	1-3 days / week	4-7 days / week
7.1 Bleach (Clorox®)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2 Ammonia (Windex®, Mr. Clean Top Job®)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.3 Any spray cleaning product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8 In the last **12 months**, on how many days a week have you used air freshening sprays (like Febreze® or Glade®)?

Never	Less than 1 day / week	1-3 days / week	4-7 days / week
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Accidental Chemical Spill or Gas Release

9 Were you **ever** involved in an accidental chemical spill or gas release?

\_\_\_ No \_\_\_ Yes

**IF 'NO': Go to  
Question 10**

**IF 'YES':**

9.1 In what year did the most recent accidental chemical spill or gas release occur?

\_\_\_ \_\_\_ \_\_\_

9.2 Where did this most recent accidental chemical spill or gas release occur?

*Please mark one location.*

\_\_\_ Home \_\_\_ Work \_\_\_ Elsewhere

9.3 What were you exposed to? *Please write in answer.*

9.4 Did you have to receive medical attention because of the most recent accidental exposure? \_\_\_ No \_\_\_ Yes

9.5 In the first 24 hours following the most recent accidental exposure, did you experience any respiratory symptoms such as shortness of breath, wheezing, cough, or tightness in your chest? \_\_\_ No \_\_\_ Yes

**IF 'NO': Go  
to Question 10**

**IF 'YES':**

9.5.1 How long did these symptoms last?

*Please mark the single best answer.*

- \_\_\_ Less than 1 week  
 \_\_\_ 1 week to 1 month  
 \_\_\_ More than 1 month but less than 3 months  
 \_\_\_ 3 months or longer  
 \_\_\_ Don't know/Don't remember

**Employment History**

**History of Healthcare Work**

10 Please record the age when you started working in healthcare OR the age you began as a healthcare student, whichever was earlier.

\_\_\_ \_\_\_ years old

11 How many total years have you worked in healthcare? (*Include years you were a healthcare student.*)

\_\_\_ \_\_\_ total years

**Current Employment**

12 Are you *currently* employed?

\_\_\_ No \_\_\_ Yes

**IF 'NO':**

12.1 What is your *current* employment status?

- \_\_\_ Disabled
- \_\_\_ On family leave
- \_\_\_ On extended sick leave
- \_\_\_ Retired
- \_\_\_ Student
- \_\_\_ Other, please specify:

\_\_\_\_\_  
**Go to Question 34**

**IF 'YES':**

Where do you currently work?

*If you have more than one current job, record information for the job where you work the most hours per week.*

12.2. Name of hospital or medical center:

\_\_\_\_\_

12.3 Borough in New York City or city where located:

\_\_\_\_\_

**Go to Question 13**

13 Use the lists below to identify the 2-digit occupation code for your *current* job and the 2-digit unit code for where your job is located.

*If you have more than one current job, record information for the job where you work the most hours per week.*

13.1 What is your current occupation?

— —  
occupation code

**List of 2-digit occupation codes**

*Please select single best code for your current job and record above.*

**01:** Disinfecting or sterilizing technician or technologist

**02:** Housekeeper, cleaner

**03:** Lab technician, technologist, or assistant in a medical or clinical laboratory

**04:** Nursing assistant or orderly

**05:** Licensed Practical or Vocational Nurse – LPN or LVN

**06:** Registered Nurse - RN

**07:** Nurse practitioner

**08:** Respiratory therapist or respiratory technician

**09:** Ward clerk

**10:** Other, please specify

---

13.2 In which unit do you currently work?

— —  
unit code

**List of 2-digit unit codes**

*Please select single best code for unit where you currently work and record above.*

**01:** in hospital, administration

**02:** in hospital, dialysis

**03:** in hospital, ear, nose, and throat (ENT)

**04:** in hospital, education

**05:** in hospital, emergency room (ER)

**06:** in hospital, endoscopy

**07:** in hospital, float

**08:** in hospital, general or internal medicine

**09:** in hospital, intensive care

**10:** in hospital, outpatient care

**11:** in hospital, pediatric

**12:** in hospital, psychiatric

**13:** in hospital, pulmonary

**14:** in hospital, surgery or operating room

**15:** in hospital, other unit, please specify

---

**16:** outside hospital

**17:** Other, please specify

---

14 How many hours per week do you work in your *current* job?                    \_\_\_ \_\_\_ hours per week

15 What year did you begin your *current* job?    \_\_\_ \_\_\_ \_\_\_ \_\_\_

16 In this job, are you regularly exposed to vapors, gases, dusts, or fumes?            \_\_\_ No    \_\_\_ Yes

17 In the last **12 months**, have you observed any of the following in the area(s) where you work?

17.1 Water leakage or water damage indoors on walls, floors, or ceilings?            \_\_\_ No    \_\_\_ Yes

17.2 Visible mold growth (not on food) indoors on walls, floors, or ceilings?        \_\_\_ No    \_\_\_ Yes

17.3 Odor of mold or mildew (not from food)?    \_\_\_ No    \_\_\_ Yes

18 In the last **12 months**, have there been renovations or construction in, or next to, the area(s) where you work?

\_\_\_ No    \_\_\_ Yes

**IF 'NO': Go to Question 19**

**IF 'YES': Continue with Question 18.1**

18.1 Painting walls and fixtures?    \_\_\_ No    \_\_\_ Yes

18.2 Ripping out and replacing walls, woodwork, and partitions?                        \_\_\_ No    \_\_\_ Yes

18.3 Ripping out and replacing floors, carpets and fixed furniture?                        \_\_\_ No    \_\_\_ Yes

**Exposure to Disinfectant & Sterilant Products Used on Equipment and Instruments (Current Job)**

19. Thinking about your current job and what you have done in this job in the last **12 months**:

Do you clean medical equipment or instruments with disinfectants or sterilants such as the following chemicals (and commercial products)

- Acetic acid
- Alcohol
- Bleach or bleach solution (for example, Clorox<sup>®</sup>)
- Enzymatic cleaners (for example, Asepti-Zyme<sup>®</sup>, 3M Rapid Multi-Enzyme<sup>®</sup>)
- Ethylene oxide (also called EtO)
- Formaldehyde
- Glutaraldehyde (for example, Cidex<sup>®</sup>, ColdSport<sup>®</sup>, Endocide<sup>®</sup>, Glutacide<sup>®</sup>, Hospex<sup>®</sup>, Metricide<sup>®</sup>, Onicide<sup>®</sup>, Rapicide<sup>®</sup>, Sonacide<sup>®</sup>, Sporicidin<sup>®</sup>, Wavicide<sup>®</sup>)
- Hydrogen peroxide (for example, Accell<sup>®</sup>, Optim<sup>®</sup>, Sporox<sup>®</sup>)
- Hydrogen peroxide and peracetic acid (for example, Acecide<sup>®</sup>, Metrex<sup>®</sup>, Peract<sup>®</sup>)
- Hydrogen peroxide gas plasma (for example, Sterad<sup>®</sup> system)
- Ortho-phtalaldehyde (for example, Cidex OPA<sup>®</sup>)
- Peracetic acid (for example, Steris<sup>®</sup> system)

\_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 20

IF 'YES': CONTINUE WITH QUESTION 19.1

19.1 What are the names of the disinfectants or sterilants you use to clean medical equipment or instruments?

*Please write in brand or product names, how many hours per day and how many days per week, on average, you disinfect or sterilize medical equipment or instruments, and whether you wear gloves when using these products*

Brand or Product Names	<u>Hours per day</u>				<u>Days per week</u>			<u>Gloves Worn</u>		
	< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19.2 Thinking about your current job and what you have done in this job in the last **12 months**:  
 Do you ever **prepare** medical equipment or instruments for disinfection or sterilization? \_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 19.3  
 IF 'YES': CONTINUE WITH QUESTION 19.2.1

19.2.1 Which tasks do you perform to **prepare** medical equipment or instruments for disinfection or sterilization?

Please indicate if you perform these tasks listed in the first column of the following table.  
 IF YOU ANSWER 'YES' FOR A TASK, please provide answers for how many hours per day and how many days per week, on average, you perform the task.

Tasks	Do you perform this task?		If Yes →	Hours per day				Days per week		
	Yes <input type="checkbox"/>	No <input type="checkbox"/>		< 1	1-2	3-4	>4	1	2-3	>3
Remove gross contaminants	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Purge waste from scopes, instruments, or equipment by flushing	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Refill or change disinfectant or sterilization solutions	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19.3 Thinking about your current job and what you have done in this job in the last **12 months**:  
 Do you ever **disinfect or sterilize** medical equipment or instruments using **automated systems**? \_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 19.4  
 IF 'YES': CONTINUE WITH QUESTION 19.3.1

19.3.1 Which tasks do you perform to **disinfect or sterilize** medical equipment or instruments using **automated systems**?

Please indicate if you perform these tasks listed in the first column of the following table.  
 IF YOU ANSWER 'YES' FOR A TASK, please provide answers for how many hours per day and how many days per week, on average, you perform the task, and answer the questions about types of controls.

Tasks	Do you perform this task?		If Yes →	Hours per day				Days per week			Controls			
	Yes <input type="checkbox"/>	No <input type="checkbox"/>		< 1	1-2	3-4	>4	1	2-3	>3	Is system enclosed?		Is local exhaust used?	
Operate EtO sterilizer	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Operate Plasma H <sub>2</sub> O <sub>2</sub> Sterad® system	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Operate H <sub>2</sub> O <sub>2</sub> sterilizer	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Operate Steris® system	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Clean or replace equipment screens or filters	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

19.4 Thinking about your current job and what you have done in this job in the last **12 months**:  
 Do you ever **manually** clean, disinfect, or sterilize medical equipment or instruments? \_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 19.5  
 IF 'YES': CONTINUE WITH QUESTION 19.4.1



19.4.1 For when you **manually** clean, disinfect, or sterilize medical equipment or instruments, please provide answers for how many hours per day and how many days per week, on average, you perform this task.

<u>Hours per day</u>				<u>Days per week</u>		
< 1	1-2	3-4	>4	1	2-3	>3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19.4.2 What percentage of the time do you clean, disinfect, or sterilize medical equipment or instruments using the following methods:

19.4.2.1 Sprays? \_\_\_% of time

19.4.2.2 Wipes or other methods? \_\_\_ % of time

19.5 Thinking about your current job and what you have done in this job in the last **12 months**:

Do you ever disinfect or sterilize **dialysis machines**? \_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 19.6

IF 'YES': CONTINUE WITH QUESTION 19.5.1

19.5.1 For disinfecting **dialysis machines**, please provide answers for how many hours per day and how many days per week, on average, you perform this task, and answer the question about local exhaust ventilation.

<u>Hours per day</u>				<u>Days per week</u>			<u>Controls</u>	
< 1	1-2	3-4	>4	1	2-3	>3	Is local exhaust used?	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

19.6 Thinking about your current job and what you have done in this job in the last **12 months**:

Do you ever disinfect or sterilize **portable units (for example, IV stands or carts)**? \_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 20

IF 'YES': CONTINUE WITH QUESTION 19.6.1

19.6.1 For disinfecting **portable units**, please provide answers for how many hours per day and how many days per week, on average, you perform this task, and answer the question about local exhaust ventilation

<u>Hours per day</u>				<u>Days per week</u>			<u>Controls</u>	
< 1	1-2	3-4	>4	1	2-3	>3	Is local exhaust used?	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**Exposure to Cleaning & Disinfectant Products Used on Fixed Surfaces (Current Job)**

- 20 Thinking about your current job and what you have done in this job in the last **12 months**:  
 Do you clean and disinfect surfaces (such as floors, tables, windows, beds, chairs, bathrooms, computers, counter tops) at work with products such as:
- Acids
  - Alcohol
  - Ammonia
  - Bleach/Chlorine (for example, Clorox®)
  - Chloramines
  - Detergents
  - Floor wax stripper
  - Phenolics (for example, 3M Phenolic Disinfectant 18®)
  - Quaternary ammonium compounds “Quats” (for example, 3M Neutral Quat 23®, 3M HB Quat 25®, Sani-Cloth Plus®)

\_\_\_ No \_\_\_ Yes

IF ‘NO’: GO TO QUESTION 21

IF ‘YES’: CONTINUE WITH QUESTION 20.1

- 20.1 What are the names of the cleaners/disinfectants you use to clean surfaces? *Please write in brand or product names, how many hours a day and how many days a week, you use these cleaners/disinfectants.*

Brand or Product Names	<u>Hours per day</u>				<u>Days per week</u>		
	< 1	1-2	3-4	>4	1	2-3	>3
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20.2 What tasks do you perform when cleaning and disinfecting surfaces?

Please indicate if you perform the tasks listed in the first column of the following table.

IF YOU ANSWER 'YES' FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you clean or disinfect surfaces, and the type of gloves used.

Tasks	Do you perform this task?			Hours per day				Days per week			Gloves Worn			
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl	
Manually mix, refill, or empty cleaning or disinfecting products	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean toilet, sink, shower	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spray then wipe glass, windows, mirrors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Polish wood furniture	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Polish stainless steel surfaces	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spray deodorant/disinfectant	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mop floors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cleanup spills or blood	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wipe down beds, furniture, counters, walls, computers, etc.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes, answer questions to right & below	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			What percentage of the time when cleaning these surfaces do you use sprays ____ % and wipes ____%.											

20.3 Thinking about your current job and what you have done in this job in the last **12 months**:

Do you clean and wax floors using strippers and buffers?

\_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 21

IF 'YES': CONTINUE WITH QUESTION 20.3.1

20.3.1 What tasks do you perform when cleaning and waxing floors using strippers and buffers?

*Please indicate if you perform the tasks listed in the first column of the following table.*

*IF YOU ANSWER 'YES' FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you clean or disinfect surfaces, and the type of gloves used.*

Tasks	Do you perform this task?			<u>Hours per day</u>				<u>Days per week</u>			<u>Gloves Worn</u>		
	Yes <input type="checkbox"/>	No <input type="checkbox"/>		< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
Strip floors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<b>If Yes →</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scrape floors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<b>If Yes →</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepare to buff floors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<b>If Yes →</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buff floors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<b>If Yes →</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wax floors	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<b>If Yes →</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Exposure to Chemicals Used in Laboratories (Current Job)**

21 Thinking about your current job and what you have done in this job in the last **12 months**:  
Do you use chemicals or solvents at work in the laboratory?

\_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 22

IF 'YES': CONTINUE WITH QUESTION 21.1

21.1 What are the names of the chemicals or solvents you use in laboratories?

*Please write in brand or product names, how many hours a day and how many days a week, you use these substances.*

Brand or Product Names	Hours per day				Days per week			Gloves Worn		
	< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21.2 What tasks and tools do you use when you apply or use these chemicals or solvents?

*Please indicate how many hours a day and how many days a week, on average, you apply or use these chemicals or solvents or metals, and the type of controls present.*

Tasks	Do you perform this task?			Hours per day				Days per week			Controls			
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	Is system enclosed?		Is local exhaust used?	
Pipette samples or solutions	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Place biopsy in formalin	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Prepare formalin neutralizer	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Test blood sample	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Cut tissue samples	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Prepare and fill stainer	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**Exposure to Products Used on Patients (Current Job)**

22 Thinking about your current job and what you have done in this job in the last **12 months**:  
Do you use chemicals, adhesives, alcohols or solvents (such as super glue, alcohols, alcohol preps, mineral spirits, toluene, solutions to remove adhesives) at work **on patients**?

\_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 23

IF 'YES': CONTINUE WITH QUESTION 22.1

22.1 What are the names of the chemicals/adhesives/alcohols/solvents you use on patients? Please write in brand or product names, how many hours a day and how many days a week, you use these chemicals, adhesives, alcohols, or solvents with patients

Brand or Product Names	Hours per day				Days per week		
	< 1	1-2	3-4	>4	1	2-3	>3
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22.2 What tasks do you perform when you apply or use chemicals, adhesives, alcohols, or solvents on patients?

Please indicate if you perform the tasks listed in the first column of the following table.

IF YOU ANSWER 'YES' FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you use chemicals, adhesives, alcohols or solvents at work on patients?"

Tasks	Do you perform this task?			Hours per day				Days per week			Gloves Worn		
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
Apply disinfectant with gauze or swab	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spray disinfectant	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean wounds	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply adhesive for ostomy bags	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply benzoin tincture	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Exposure to Aerosolized Medicines Used with Patients (Current Job)**

23 Thinking about your current job and what you have done in this job in the last **12 months**:  
Do you administer aerosolized medications such as antibiotics (for example, Tobramycin, Amikacin, or Colistin), pentamidine (for example, Nebupent®), ribavirin, bronchodilators, anesthetics, antitrypsin)?

\_\_\_ No \_\_\_ Yes

IF 'NO': GO TO QUESTION 24

IF 'YES': CONTINUE WITH QUESTION 23.1

23.1 What are the names of the aerosolized medications you administer?

*Please write in brand or product names, how many hours a day and how many days a week, you administer aerosolized medications*

Brand or Product Names	Hours per day				Days per week		
	< 1	1-2	3-4	>4	1	2-3	>3
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23.2 What tasks and tools do you use to administer aerosolized medications?

*Please indicate if you perform the tasks listed in the first column of the following table.*

*IF YOU ANSWER 'YES' FOR A TASK, Please indicate how many hours a day and how many days a week, on average, you clean or disinfect surfaces, and the type of gloves used.*

Tasks	Do you perform this task?		If Yes →	Hours per day				Days per week			Gloves Worn		
	Yes	No		< 1	1-2	3-4	>4	1	2-3	>3	None	Nitrile	Latex or vinyl
Manage patients on ventilators or oxygen	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teach use of metered-dose inhalers or nebulizers	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply nebulizer therapy using:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
hand pumps?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
automated enclosed system?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	If Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Employment 5 Years Ago**

24. Were you employed 5 years ago?    \_\_\_ No \_\_\_ Yes

**IF 'NO':**

24.1 What was your employment status 5 years ago?

- \_\_\_ Disabled
  - \_\_\_ On family leave
  - \_\_\_ On extended sick leave
  - \_\_\_ Retired
  - \_\_\_ Student
  - \_\_\_ Other, please specify:
- 

**Go to Question 34**

**IF 'YES':**

24.2 Five years ago, were you working in the same job that you already reported as your current job? 'Same job' means both the occupation code and unit code are the same.

\_\_\_ No \_\_\_ Yes

**IF 'NO': Go to Question 25**

**IF 'YES': Go to Question 34 on Page 17**

25. Use the lists below to identify the 2-digit occupation code for the job you had 5 years ago and the 2-digit unit code for where the job was located.

*If you had more than one job 5 years ago, record information for job where you worked the most hours per week.*

25.1 What was your occupation 5 years ago?

25.2 In which unit did you work 5 years ago?

\_\_\_ \_\_\_  
Occupation code

**List of 2-digit occupation codes**

*Please select single best code for the job you had 5 years ago and record above.*

- 01:** Disinfecting or sterilizing technician or technologist
  - 02:** Housekeeper, cleaner
  - 03:** Lab technician, technologist, or assistant in a medical or clinical laboratory
  - 04:** Nursing assistant or orderly
  - 05 :** Nurse (RN, LPN)
  - 06:** Nurse practitioner
  - 07:** Respiratory therapist or respiratory technician
  - 08:** Ward clerk
  - 09:** Other, please specify
- 

\_\_\_ \_\_\_  
Unit code

**List of 2-digit unit codes**

*Please select single best code for the unit where you worked 5 years ago and record above.*

- 01:** in hospital, administration
  - 02:** in hospital, dialysis
  - 03:** in hospital, education
  - 04:** in hospital, emergency room (ER)
  - 05:** in hospital, endoscopy
  - 06:** in hospital, float
  - 07:** in hospital, general or internal medicine
  - 08:** in hospital, intensive care
  - 09:** in hospital, outpatient care
  - 10:** in hospital, pediatric
  - 11:** in hospital, psychiatric
  - 12:** in hospital, pulmonary
  - 13:** in hospital, surgery or operating room
  - 14:** outside hospital
  - 15:** Other, please specify
-



26 How many hours per week did you work in the job you had 5 years ago? \_\_\_ hours per week

27 What year did you begin that job? \_\_\_

28 What year did you stop working in that job? \_\_\_

29 Were you regularly exposed to vapors, gases, dust, or fumes in that job? \_\_\_ No \_\_\_ Yes

30 Thinking about the job you had 5 years ago, did you clean medical equipment or instruments with disinfectants or sterilants such as the following chemicals (and commercial products)

- Acetic acid
- Alcohol
- Bleach or bleach solution (for example, Clorox®)
- Ethylene oxide or EtO
- Formaldehyde
- Glutaraldehyde (for example, Cidex®, ColdSport®, Endocide®, Glutacide®, Hospex®, Metricide®, Onicide®, Rapticide®, Sonacide®, Sporicidin®, Wavicide®)
- Hydrogen peroxide (for example, Accell®, Optim®, Sporox®)
- Hydrogen peroxide gas plasma (for example, Sterad® system)
- Ortho-phthalaldehyde (for example, Cidex OPA®)
- Peracetic acid (for example, Steris® system)
- Hydrogen peroxide and peracetic acid (for example, Acecide®, Metrex®, Peract®)

\_\_\_ No \_\_\_ Yes

30.1 In the process of disinfecting or sterilizing medical equipment \_\_\_ No \_\_\_ Yes \_\_\_ Don't Know or instruments, did you use an enzymatic cleaner as well?

31 Thinking about the job you had 5 years ago, did you clean surfaces (such as floors, tables, windows, beds, chairs, bathroom) at work with cleaners or disinfectants such as bleach/chlorine, ammonia, chloramines, quats, phenolics, floor stripper, acids, or detergents? \_\_\_ No \_\_\_ Yes

32 Thinking about the job you had 5 years ago, did you observe any of the following in the building where you worked?

- 32.1 Water leakage or water damage indoors on walls, floors, or ceilings? \_\_\_ No \_\_\_ Yes
- 32.2 Visible mold growth (not on food) indoors on walls, floors, or ceilings? \_\_\_ No \_\_\_ Yes
- 32.3 Odor of mold or mildew (not from food)? \_\_\_ No \_\_\_ Yes

33 Thinking about the job you had 5 years ago, were there renovations or construction at your job? \_\_\_ No \_\_\_ Yes

**Changing Jobs**

34 Have you ever had to change or leave a job or position because it affected your breathing? This would include changing jobs or positions within the same workplace.

\_\_\_ No \_\_\_ Yes

**IF 'NO': Go to Question 35 on next page**

**IF 'YES':** *If you have changed or left a job or position more than once because it affected your breathing, please answer the following questions about the most recent time this happened.*

34.1 In which year did you change or leave this job or position?    \_\_\_ \_\_\_ \_\_\_ \_\_\_

34.2 Concerning the job or position you changed or left:

34.2.1 What kind of job or position did you change or leave?

\_\_\_\_\_

34.2.2 In what industry was this job or position you changed or left?

\_\_\_\_\_

34.2.3 What had you done in the job or position you changed or left?

\_\_\_\_\_

34.2.4 What exposure or activity affected your breathing in the job or position you changed or left?

\_\_\_\_\_

34.3 Concerning the job or position you went to:

34.3.1 What kind of job or position did you go to?

\_\_\_\_\_

34.3.2 In what industry was the job or position you went to?

\_\_\_\_\_

34.3.3 What did you do in this new job or position?

\_\_\_\_\_

