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**Implementing Branching Logic by Enabling and Disabling Questions
in the Online Version of the
National Sample Survey of Registered Nurses:
Results of a Usability Evaluation**

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Abstract

In 2017, staff in the Center for Survey Measurement of the U.S. Census Bureau conducted usability testing and accessibility testing of the 2018 National Sample Survey of Registered Nurses (NSSRN) online survey. During the usability sessions, participants accessed the survey either on a Census provided laptop computer or on their own mobile device. This report provides a summary of the usability and accessibility methods and results from evaluating the NSSRN online survey. Focus is applied to the experience participants had on webpages where branching logic (i.e., skips sequences) was implemented by disabling (i.e., greying out) or re-enabling question and response fields based upon the answer given to an earlier filter question on the page. Disabling questions to implement skip sequences is different from the typical Census Bureau online survey design where there is only one question per page and skip sequences are implemented by skipping entire pages that do not apply based on prior responses. During usability testing, we observed no usability issues when the question text, the response field, and the response field label were disabled. Participants were able to understand that the question did not apply to them. There was no indication that participants were answering the filter questions in such a way to avoid having to answer more questions. In fact, we observed one instance where the participant changed her answer to the filter question because she could read the subsequent disabled questions and realized she had misinterpreted the filter question. When the participant then changed her answer to the filter question, she actually answered more questions, and not fewer. While disabling the question and the response field appeared to work well for participants, we did observe participant confusion when only the response field was disabled, and not the response field label. When presented with that design, many participants tried to answer the disabled question and did not understand why it would not respond to repeated tapping in the field.

Keywords: online survey design, skip sequence, conditional branching, multiple related questions on a webpage

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1. Introduction

The National Sample Survey of Registered Nurses (NSSRN), sponsored by the Health Resources and Services Administration, an agency of the U.S. Department of Health and Human Services, is the largest nationally representative survey of registered nurses in the U.S. The survey had been conducted every four years between 1980 and 2008. The data collection is scheduled to resume in 2018, after a 10-year hiatus, with the U.S. Census Bureau as the new data collector. The survey is sent to a small percentage of actively licensed registered nurses and nurse practitioners in each state. Nurses are asked to report on their education, employment, intentions regarding nursing work, and demographics. These data are used to assess the status and trends in the U.S. nursing workforce (<https://datawarehouse.hrsa.gov/data/dataDownload/nssrndownload.aspx>).

This survey was last conducted in 2008 via multi-mode data collection using a Web questionnaire or a paper questionnaire and, for non-responders for whom telephone numbers were available, over the telephone. The NSSRN went through a significant redesign for the 2018 collection, adding new items, and combining National Sample Survey of Registered Nurses and the National Sample Survey of Nurse Practitioners into one survey.

In preparation for fielding the 2018 NSSRN, cognitive testing was conducted on the survey questions by Census Bureau staff (Stringer, Hernandez-Viver, Vetting, & Reiser, 2017). After that testing, in November and December 2017, staff in the Center for Survey Measurement (CSM) of the Census Bureau conducted one round of usability testing of the candidate online NSSRN instrument on PC and mobile devices. The goal of the testing was to uncover usability issues with the current design, to cognitively test questions that were either added or revised after the earlier cognitive testing, and to make recommendations for enhancements to ensure that the online survey performs optimally during data collection.

Fifteen individuals participated in the testing -- eight registered nurses and seven nurse practitioners. The NSSRN paper questionnaire (see Attachment A) was used as the baseline for the questions and question order in the online instrument. Testing results and recommendations for both usability and accessibility were provided to the sponsor shortly after testing was finished and are found in Attachment B. The intention of this report is to document those findings, along with the satisfaction ratings associated with the NSSRN online survey collected during usability testing (Attachment C), and eye tracking data collected during the usability testing on the laptop (Attachment D). Results from the usability testing also fed into revisions to the paper questionnaire that will be fielded in 2018. We include this final paper questionnaire (Attachment E), even though it was not tested, because it is an easy way for readers to scan the survey to determine what was tested and what changed based on the usability testing results.

In the body of the report, we provide a detailed description of how participants' interacted with the conditional branching design used within the survey for both PC and mobile devices.

2. Background on the use of conditional branching within online surveys

Conditional branching, or skip sequences, are used in surveys when the answer to one question dictates what subsequent questions a respondent should answer. The initial question in a skip sequence is called a filter question and based on the answer provided to that question, respondents should answer or not answer subsequent questions. On paper questionnaires, instructions for skip sequences are typically next to the response choice, such as the “*SKIP to Question A11 on page 4*” next to the “No” response for Question A10 as shown in Figure 1.

A10. Did you earn any additional academic degrees after acquiring your first RN degree that you described in Question A3? Do not include degrees you are currently working towards.

☐ Yes → Please complete all rows of the table below for each degree you earned

☐ No → SKIP to Question A11 on page 4

	Nursing Degrees				
	Associate in nursing	Bachelor's in nursing	Master's in nursing	Another Master's in nursing	Doctorate in nursing (PhD, ScD, DNS, ND, DNP)
A10a. In what year did you receive this degree?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10b. In what U.S. state or foreign country	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Figure 1 Paper version of the NSSRN showing a skip sequence

The success of these skip instructions depends greatly on the respondent reading and understanding what to do next (Redline and Dillman, 1990). In paper questionnaires with skip sequences, there are errors of omission, when a question is not answered that should be answered, and there are errors of commission, when a question is answered, when it did not need to be answered (Krosnick, 2017).

These errors can be reduced in an online form by automating the branching logic. Perhaps the most typical way is using a design where there is one question per webpage with branching logic implemented between the pages. In these surveys, the respondent always navigates to the next correct question based on the current answers provided. Automated branching removes the errors of commission, and unintended errors of omission.

The online design becomes more complicated if multiple questions appear on the same webpage and skip sequences are within those questions. There are several distinct design solutions for branching between multiple questions on the same survey webpage as shown in Table 1.

Table 1: Design solutions for conditional branching within a webpage

Branching design solution	Attributes
Static skip instructions	This solution is identical to the paper form solution and it doesn't not require any additional programming.
Skip instructions as hyperlink	A hyperlink next to the response option moves the user to the next applicable question. However, the user must use the hyperlink to navigate correctly.
Unfolding questions	Questions appear on the screen based on prior responses.
Disabling and enabling questions	Questions either disable (become grey and nonfunctioning) or enable (become active) based on prior responses.

Static skip instructions and skip instructions with hyperlinks: One design solution would be to use instructions similar to a paper questionnaire; however, this design does not take advantage of automation and the same errors of commission and omission exist. Another solution is to use hyperlinks. Peytchev, Couper, McCabe, and Crawford (2006) conducted an experiment comparing a paging design with branching automated between webpages and a scrolling design with hyperlinks. They found only a few differences between the two conditions. One concern with a scrolling design where skip sequences can be seen by respondents is that respondents will choose to answer questions in such a way that minimizes the number of follow up questions they have to answer, thus increasing measurement error. Petychev et al. found some support for this behavior with about 2 percent fewer respondents in the scrolling version reported having used alcohol in their lifetime. They also found very few respondents actually using the hyperlinks to navigate to the next correct question.

Unfolding design: Other design solutions for branching between multiple questions on the same survey webpage include showing only the filter question and then depending upon the answer to that question, the subsequent questions could "appear" or "unfold" beneath the question. This method is employed in the American Community Survey, as shown in Figures 2 and 3. While we have not observed usability problems with this design during testing, this is not a typical design because it uses an element of surprise, as questions "pop up" or appear, seemingly, at will. Additionally, in this particular application, the filter question becomes disabled. If a respondent made a mistake on the filter question and meant to report "no", returning to the filter question to change the answer is difficult and requires use of back navigation. Good online design is consistent so that users know what to expect and it allows the user to be in control (Nielsen, 1995).

13 b. Does anyone in this household pay for gas? Select "No" if gas and electricity are billed together and you included the gas payment in the electricity question. (Help)

☒ Yes

☐ No

< >

Figure 2: Example of a filter question about paying for gas for the household in the American Community Survey

13 b. Does anyone in this household pay for gas? Select "No" if gas and electricity are billed together and you included the gas payment in the electricity question. (Help)

☒ Yes

☐ No

➔ 14 LAST MONTH, what was the cost of gas for this mobile home? (Help)

Last Month's Cost — Dollars

\$ Amount .00

< >

Figure 3: If the filter question is answered "yes" then a subsequent question appears on the screen and the filter question becomes disabled.

Disabling and enabling design: Yet another design for conditional branching within a screen is for the subsequent questions and response fields to become disabled (i.e., light grey) or enabled (typical font coloring) based upon the answer to a filter question. This differs from the prior example because the questions are always on the screen and do not “pop-up.” When an answer field is disabled, respondents cannot enter data into it. The grey and the inability to interact with the field is supposed to convey to respondents that the field is not to be completed or is inactive. A common implementation of this feature is with the “Other/specify” field found in many single or multiple choice survey questions as shown in Figure 4. The default view is with the write-in field grey and disabled. When the “Other” choice is selected, then the field becomes “enabled” as shown in Figure 5.

United States Census Bureau

National Sample Survey of Registered Nurses

Instructions Frequently Asked Questions Survey Information Logout

Telephone Assistance: 1-888-369-3598
(9:00 a.m. - 9:00 p.m. ET Mon-Sat, 11:00 a.m.-9:00 p.m. ET Sun)

Primary Nursing Employment

As of December 31, 2017, what type(s) of training have you received to facilitate team-based care?
Team-based care refers to comprehensive health services by at least two health professionals working collaboratively to provide safe, quality care. Select all that apply.

- ☐ Formal classroom training at my college or university
- ☐ Formal classroom training offered by my place of employment
- ☐ Online educational videos offered by my place of employment
- ☐ Informal training (e.g., on the job)
- ☐ No training at all
- ☐ Other — Specify

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Figure 4: The default view of the team-based care question in the 2018 NSSRN with the “Other/specify” field disabled

United States Census Bureau

National Sample Survey of Registered Nurses

Instructions Frequently Asked Questions Survey Information Logout

Telephone Assistance: 1-888-369-3598
(9:00 a.m. - 9:00 p.m. ET Mon-Sat, 11:00 a.m.-9:00 p.m. ET Sun)

Primary Nursing Employment

As of December 31, 2017, what type(s) of training have you received to facilitate team-based care?
Team-based care refers to comprehensive health services by at least two health professionals working collaboratively to provide safe, quality care. Select all that apply.

- ☐ Formal classroom training at my college or university
- ☐ Formal classroom training offered by my place of employment
- ☐ Online educational videos offered by my place of employment
- ☐ Informal training (e.g., on the job)
- ☐ No training at all
- ☒ Other — Specify

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Figure 5: The team-based care question in the 2018 NSSRN with the “Other” box selected and the write-in field enabled

Expanding that design to disable entire questions as the default view is shown in Figure 6. If the filter question is answered such that the respondent should answer the subsequent questions, then those questions and response choices re-enable, as shown in Figure 7. The questions remain disabled if the respondent answers the filter question in such a way that the subsequent

questions should not be answered. The light grey of the question text in the disabled view still allows the respondent to read the question, but is supposed to indicate that it does not apply.

United States Census Bureau National Sample Survey of Registered Nurses

Instructions Frequently Asked Questions Survey Information Logout

Telephone Assistance: 1-888-369-3598
(9:00 a.m. - 9:00 p.m. ET Mon-Sat, 11:00 a.m. - 9:00 p.m. ET Sun)

Eligibility and Education

Did you earn any additional academic degrees after acquiring your first RN degree?
Do not include degrees you are currently working towards.

☐ Yes
☐ No

Please select any additional academic degrees earned after acquiring your first RN degree.
Do not include degrees you are currently working towards.

Nursing Degrees

- ☐ Associate in nursing
- ☐ Bachelor's in nursing
- ☐ Master's in nursing
- ☐ Another Master's in nursing
- ☐ Doctorate in nursing (PhD, ScD, DNS, ND, DNP)

Non-nursing Degrees

- ☐ Associate in non-nursing field
- ☐ Bachelor's in non-nursing field
- ☐ Master's in non-nursing field
- ☐ Another Master's in non-nursing field
- ☐ Doctorate in non-nursing field (PhD, JD, MD, EdD)

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Figure 6: Example of whole questions disabled as the default view

United States Census Bureau National Sample Survey of Registered Nurses

Instructions Frequently Asked Questions Survey Information Logout

Telephone Assistance: 1-888-369-3598
(9:00 a.m. - 9:00 p.m. ET Mon-Sat, 11:00 a.m. - 9:00 p.m. ET Sun)

Eligibility and Education

Did you earn any additional academic degrees after acquiring your first RN degree?
Do not include degrees you are currently working towards.

☒ Yes
☐ No

Please select any additional academic degrees earned after acquiring your first RN degree.
Do not include degrees you are currently working towards.

Nursing Degrees

- ☐ Associate in nursing
- ☐ Bachelor's in nursing
- ☐ Master's in nursing
- ☐ Another Master's in nursing
- ☐ Doctorate in nursing (PhD, ScD, DNS, ND, DNP)

Non-nursing Degrees

- ☐ Associate in non-nursing field
- ☐ Bachelor's in non-nursing field
- ☐ Master's in non-nursing field
- ☐ Another Master's in non-nursing field
- ☐ Doctorate in non-nursing field (PhD, JD, MD, EdD)

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Figure 7: That same question with the filter question answered in such a way that the subsequent questions should be answered and thus they become enabled.

The opposite design could also be implemented, that is, everything on the screen is enabled as the default view and then parts of the screen are disabled based on the answers on that screen. However, this design should only be used when a respondent chooses between two equal choices, such as country or state as shown in Figure 8. In this example, the respondent does not have to answer both questions, he or she should answer only one question, but there is no filter question. If the respondent reported living in a state, the country field should disable, if the respondent reported living in a different country than the U.S., the state field should disable, since a respondent cannot simultaneously live both inside and outside the U.S.

National Sample Survey of Registered Nurses

Instructions | Frequently Asked Questions | Survey Information | Logout

Help Telephone: 1-888-368-3598
(9:00 a.m. - 9:00 p.m. ET Mon-Sat, 11:00 a.m. - 9:00 p.m. ET Sun)

General Information

Where did you reside on December 31, 2016? This information is critical for producing state/county estimates of the nursing workforce.

City/Town:

County:

State:

Country (if not USA):

Zip:

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Figure 8: In this example, the respondent only should select state or country to answer, not both.

While there are many ways to implement the disable and re-enable designs, based on our literature review, we found no empirical studies comparing the use of disabling and re-enabling questions within a survey to accomplish conditional branching nor did we find any discussion on how respondents interact and interpret the disabled text and fields.

Summary of conditional branching within the NSSRN: The 2018 NSSRN used the disable and enable design to communicate conditional branching within webpages of the online survey. This report documents the usability issues found with the disable and re-enable designs as observed in the 2018 NSSRN usability testing. We focus our findings on whether respondents appeared to understand what the grey text and response choices meant under the different designs, and whether we observed any indication of measurement error with the designs.

3. National Sample Survey of Registered Nurses Online Questionnaire

The NSSRN online questionnaire is one of many surveys the Census Bureau developed using an in-house codebase framework called Centurion. The survey version usability tested had 12

sections, labeled A through L, covering a wide array of topics concerning the education and employment of nurses, advanced practice nurses, and nurse practitioners. For each section of the survey, there were multiple webpages with a 'next' button to navigate forward to the next webpage and a 'previous' button if the respondent wanted to return to a prior page. Most webpages in the survey contained only one question; however, several webpages contained multiple related questions with skip sequences built into the page where the questions would become enabled or disabled depending upon the answer to the filter question on that page. There was also some branching logic between webpages within the survey, and if that logic was triggered, whole sections of questions could be skipped.

The survey was designed to render optimally on PC and mobile platforms, called "PC and mobile optimization." Optimization means that the screens automatically readjusted in size and in design depending on the display size of the device. The PC-optimized version and the mobile-optimized version displayed in the same manner for the enabled and disabled questions and response fields.

The NSSRN is a relatively long survey, taking respondents approximately 30 minutes to complete. There were approximately 150 questions in the version tested; however, the number of questions any one respondent receives is often fewer because of skip patterns. Of those 150 questions, there were four webpages where whole questions were skipped using the disabled and enabled design; 19 webpages with the "Other/specify" write-in field disabled and then re-enabled if that response choice was selected; and seven webpages where state and country were asked simultaneously and on six of these webpages, disabling of the response field was used.

4. Methods

We conducted one round of usability testing on the NSSRN between November and December 2017. This section describes the participants, the devices they used to access the survey, and the procedure implemented during the testing sessions. The last section describes the accessibility methods.

4.1. Participants

Fifteen participants took part in usability testing of the 2018 NSSRN. Eight were registered nurses and seven were nurse practitioners. These two groups were recruited because they complete different sections of the questionnaire. Of the eight registered nurses, one was an advanced practice nurse with a nurse midwife certification; five worked in a hospital; one was a school nurse; and one worked in a hospice care facility. These eight individuals experienced a wide variety of educational paths to becoming a nurse. There was also a wide-variety of the number of years they were a nurse. Of the seven nurse practitioners, three had worked in convenience care; two were currently working in a hospital; one individual had worked in a rural hospital; one was in patient consultation; and one person currently was not working due to relocation, but had

a job lined up. Several of the nurse practitioners had varied employment paths which the survey did not capture well. Participant characteristics are described in Table 2.

Participants were recruited through advertisements on Craigslist, personal connections, an email blast that was distributed to all Census employees, and through an email contact to the Maryland and Virginia local chapters of the American Association of Nurse Practitioners. The majority of participants lived in the Washington, D.C. – Baltimore metropolitan area, with one person currently living and working in Texas.

Table 2: Demographic characteristics of 2018 NSSRN Usability Testing Participants

Demographics	n=15
Sex	
Female	13
Male	2
Age – Mean (Std. Deviation) (Range)	37 (7) (25-54)
Race/Hispanic origin	
White	13
Black	1
Asian	1

4.2. Devices used

Eight participants answered the survey using a Census provided laptop; five used their smartphone, and two used their tablet (see Table 3 for the summary of devices).

Table 3: Devices used across both rounds of NSSRN usability testing

Device	Registered Nurses	Nurse Practitioners
Census provided laptop Dell Latitude E6430, Windows 7	4	4
Smartphone (BYOD) iPhone 7 Safari – mobile stand Android “1 plus 5” Google chrome – mobile stand iPhone X– mobile stand Samsung S5 – free held iPhone 6S – mobile stand	1 1 1	1 1
Tablet (BYOD) iPad Pro ~9.5 inches – free held iPad mini air 8” – free held	1	1

4.3. Usability Procedure

Each usability test conducted involved the participant completing the draft online version of the 2018 NSSRN while being observed by a Census Bureau test administrator. Participants were instructed to answer the questions as they applied in their real life circumstances. All sessions

included video recording and audio recording with participant consent. Each usability session lasted approximately one-and-a-half hours. To offset the costs of parking and travel, participants received an incentive of \$100 for their participation. While 10 sessions occurred in the usability lab at the Census Bureau's headquarters building, the other five sessions occurred at libraries in the Washington DC metro area. Most sessions were observed by another Census Bureau usability lab researcher, and many were observed by the sponsors of the project. Observers watched and listened in a separate area for sessions conducted at headquarters. For sessions at the libraries, observers were in the same room as participants, but watched the survey completion on a separate device with a feed from the participant's device so that observers were not hovering over the participants.

Participants were instructed to "think aloud" while completing the survey. The think-aloud technique is modeled on Ericsson and Simon's (1993) approach to collecting verbal feedback. Our think-aloud protocol was used to maintain a running verbal commentary of the participants' expectations and reasoning. A participant engaging in thinking aloud verbalizes his or her available, conscious thoughts and decisions while completing the tasks so that the researcher can understand the participants' cognitive processes as they interact with the web survey interface. The test administrator encouraged the participants to continue to think aloud, using prompts such as, "Keep talking" if they became silent for more than ten seconds.

We collected eye-tracking data for seven of the eight participants who completed the survey on the Census-provided laptop using the Tobii X260 system. The Tobii system was also used to record the audio and video of the participant answering the survey. We did not bring the eye-tracking equipment to one off-site location where the laptop was used to complete the survey. We also did not collect eye tracking for the mobile devices because of the effort needed to analyze that data. Instead we used Camtasia on another Census laptop to record the screen capture of the participant answering the NSSRN on their mobile device. To make the video recording, we had some participants place their device on the Tobii mobile device stand (<https://www.tobiipro.com/product-listing/mobile-device-stand/>) which eliminates the movement of the device and provided a clear picture of the screen. We had others use their device free-hand and recorded using a Webcam attached to a gooseneck clamp. We observed no discernable difference in usability problems identified between the two methods, but the Tobii mobile stand provided a more readable video capture.

After the participant finished the survey, he or she completed a satisfaction questionnaire including opinion questions about general usability aspects of the survey (e.g., using forward and backward navigation and comprehension of general survey terminology). Then, the participant was shown a PowerPoint presentation with some screenshots taken from the survey and asked a few questions about those screens, focusing on the new questions. The test administrator followed a protocol during the session and the questions and protocol were approved by OMB using the generic clearance for pretesting 0607-0725.

4.4. Accessibility procedure

Concurrent to the usability testing, accessibility testing was performed by using the Job Access With Speech (JAWS) screen reader for the PC and Google TalkBack for smartphones. We did not test with screen-reader users. The evaluation was performed by a researcher trained in testing for accessibility. JAWS users navigate by keyboard commands on a computer desktop to hear the screen content. Smartphone users navigate by left and right swipes and by touch to hear the screen content. The researcher uses these gestures to test the instruments.

4.5. Analysis

Immediately after each usability session, the researchers summarized the usability and cognitive findings and provided the summary to the sponsor. The summary was based upon the observed behavior of the participant and the verbal feedback. These summaries were used to create the “Quick Report” which included user-centered design issues observed, cognitive problems with the questions and response options, and recommendations. Accessibility testing took place over the course of a few days. “Quick Report” findings for both usability and accessibility are provided in Attachment B.

Participant provided satisfaction data was summarized and is documented in Attachment C.

Eye tracking data for particular screens that were problematic or that were modified after usability testing is available in Attachment D. Eye tracking data were collapsed across the seven participants to form heat maps. These maps are color-coded. They show the general pattern of where participants looked on the screen and where they looked the most (denoted by red areas). We also include quantitative eye-tracking data by participant, including the total number of fixations and fixation duration on the main survey part of the webpage. See Figures 9 and 10 for an example of what parts of the screen were included when summarizing that data. A fixation is maintaining the visual gaze on a single location long enough to read a word. More fixations do not necessarily mean that the survey page is faulty or poorly designed; participants could simply be more engaged with the design. However, designers should strive to convey the meaning of the question and response options with as few fixations as possible because fixations could be considered a proxy for an aspect of respondent burden. The fixation data documented should be used as a baseline when testing the next iteration of the instrument.

Within the body of the report, we also include heat maps, total number of fixations, and fixation duration for screens with disabled text and fields. The purpose of these data is to determine whether participants understand that when the text is disabled, that question does not apply to them. If participants understand that concept, there should be very few if any fixations on the disabled areas of the screen if that part was not enabled during the session. We separate the fixation and heat maps into two groups per screen: one group is if the fields were disabled throughout the session and the other group is if the fields were enabled.

National Sample Survey of Registered Nurses

Instructions Frequently Asked Questions Survey Information Logout

Help Telephone: 1-888-368-3598
(9:00 a.m. - 9:00 p.m. ET Mon-Sat, 11:00 a.m. - 9:00 p.m. ET Sun)

Principal Nursing Employment

Did you go through an orientation program for the principal nursing position you held on December 31, 2016?

☐ Yes
☐ No

Did you have a preceptor assigned to you during this orientation program?

☐ Yes
☐ No

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Figure 9: Example screen from the NSSRN with disabled text.

National Sample Survey of Registered Nurses

Instructions Frequently Asked Questions Survey Information Logout

Help Telephone: 1-888-368-3598
(9:00 a.m. - 9:00 p.m. ET Mon-Sat, 11:00 a.m. - 9:00 p.m. ET Sun)

Principal Nursing Employment

Did you go through an orientation program for the principal nursing position you held on December 31, 2016?

☐ Yes
☐ No

☐ Yes
☐ No

entire page pn orient

disabled text pn orient

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Figure 10: That same screen with two areas of interest indicated for fixation count and duration. One area (the pink area) is the entire screen from the subheading to the navigation buttons, while the red area is the disabled text area. The same areas were identified for each question of interest.

5. Findings and Recommendations

The NSSRN web instrument implements different methods to enable and disable text for skips. The following subsections discuss each of the ways.

5.1. “Other/specify” write-in field

On screens where there was an “Other/specify” write-in response field option, that field was disabled until the participant selected the “Other” response choice. There were several screens with multiple choice questions with an “Other” choice at the bottom of the field. These fields were disabled until a participant selected “Other” and then the field would become enabled. We observed no usability problems with the disable field design when it was at the bottom of the response choice list for PC or mobile devices. Figure 11 shows a question about team based care where the last choice is “Other/specify.” This was a complex question, and none of the seven participants for whom we have eye tracking data selected other. Figure 12 shows few if any fixations on the grey box.

The screenshot displays the 'National Sample Survey of Registered Nurses' interface. At the top, there is a navigation bar with links for 'Instructions', 'Frequently Asked Questions', 'Survey Information', and 'Logout'. Below this, a header section titled 'Principal Nursing Employment' contains the question: 'What type(s) of training have you received to facilitate team-based care?'. A subtext explains that team-based care involves comprehensive health services by at least two health professionals working collaboratively to provide safe, quality care. Below the question, there is a list of five radio button options: 'Formal classroom training at my college or university', 'Formal classroom training offered by my place of employment', 'Online educational videos offered by my place of employment', 'Informal training (e.g., on the job)', and 'No training at all'. The fifth option, 'Other — Specify', is selected, and a greyed-out text input field is visible below it. At the bottom of the question area, there are 'Previous' and 'Next' buttons. The footer of the page includes links for 'Burden', 'Accessibility', 'Privacy', and 'Security'.

Figure 11: Team-based care question with “Other/specify” field disabled as the default view.

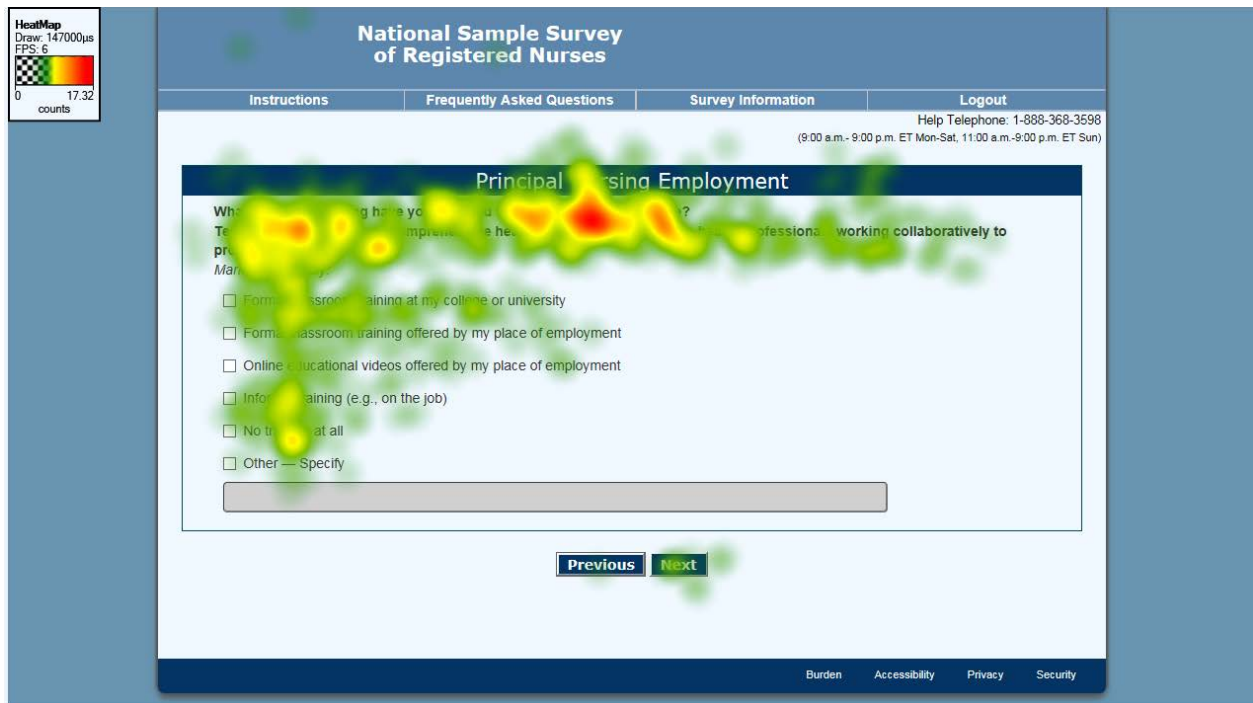


Figure 12: All seven participants answering team-based care. No one selected “other” and there are little to no fixations within the grey disabled specify field at the bottom of the screen.

When participants selected “Other” at a question, such as the question collecting the reasons the participant remained in their nursing position in Figure 13, then the heat map indicates that some participants looked and interacted with the field as shown in Figure 14. In this question (several) participants added reasons for remaining in the same job. Again, there were no observed usability issues when the write in box was disabled or re-enabled when the “Other” choice was selected. Participants appeared to understand that when the box was grey, it did not apply to them, but if they selected the “Other” choice, then they should type into the white box.

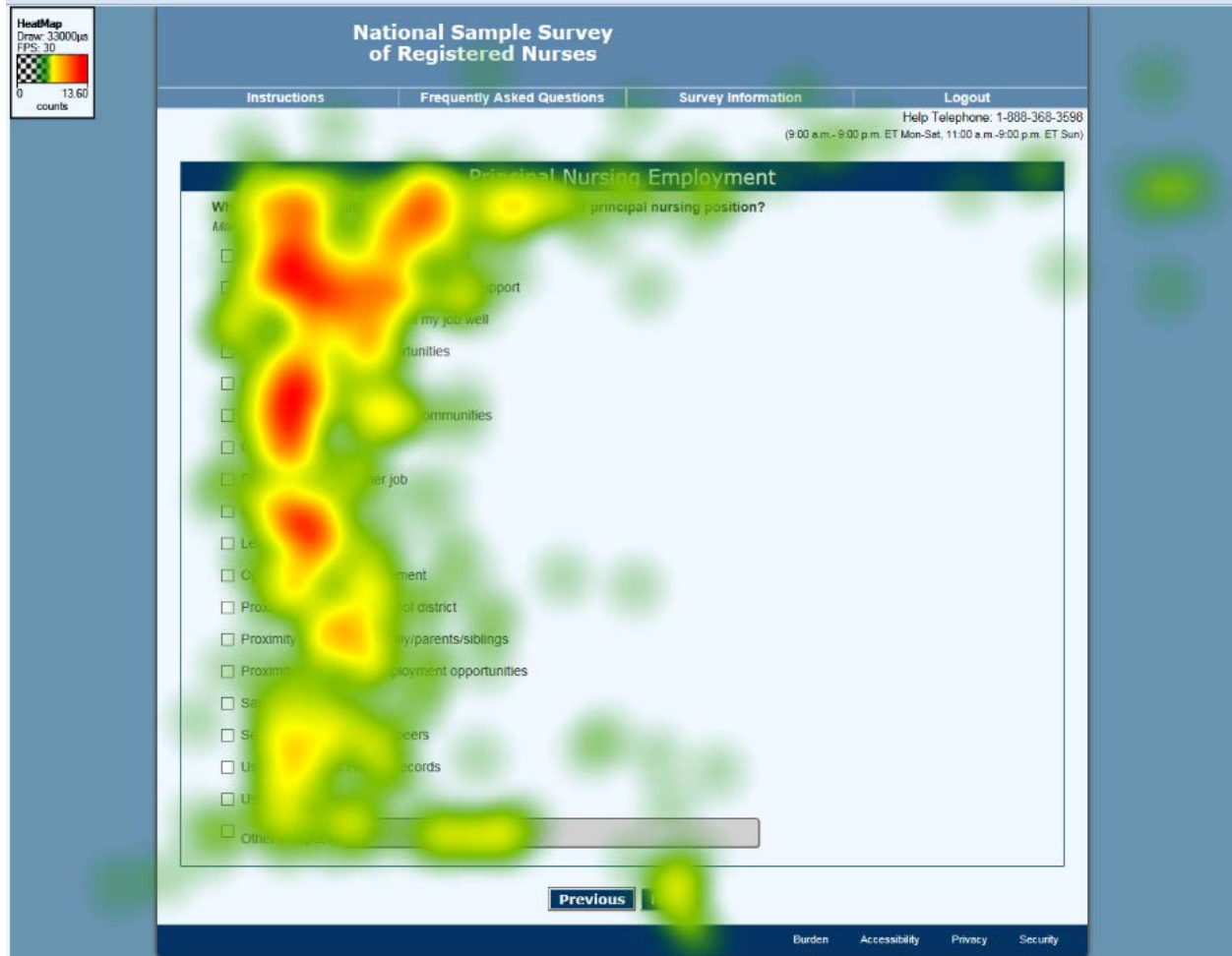


Figure 14: The same question for six participants, two of whom reported another reason in the “Other/specify” field.

However, the grey disabled “Other/specify” field also acted as stopping point when several response lists were joined together into one question as they were in the employment setting question in Figure 15. Many participants verbally shared that they thought they had to answer once for each section, rather than choose one choice across the entire list. One or two participants said that the grey field made it seem like the end of the list. Notice too that the “Other/specify” write-in field is below the response option and not to the right of the response option as it was in Figures 13 and 14.

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Principal Nursing Employment

Which one of the following best describes the employment setting of the principal nursing position you held on December 31, 2016? *Mark one box only.*

Hospital (not mental health)

- ☐ Critical Access Hospital
- ☐ Inpatient unit, not Critical Access Hospital
- ☐ Emergency Department, not Critical Access Hospital
- ☐ Hospital sponsored ambulatory care (outpatient, surgery, clinic, urgent care, etc.)
- ☐ Hospital ancillary unit
- ☐ Hospital nursing home unit
- ☐ Hospital administration
- ☐ Hospital other — Specify

Other inpatient setting

- ☐ Nursing home unit NOT in hospital
- ☐ Rehabilitation facility/long-term care
- ☐ Inpatient mental health/substance abuse
- ☐ Correctional facility
- ☐ Inpatient hospice
- ☐ Other inpatient setting — Specify

Clinic/Ambulatory

- ☐ Nurse managed health center
- ☐ Private medical practice (clinic, physician office etc.)
- ☐ Public clinic (Rural Health Center, FQHC, Indian Health Service, Tribal Clinic etc.)
- ☐ School health service (K-12 or college)
- ☐ Outpatient mental health/substance abuse
- ☐ Urgent care (not hospital based)
- ☐ Ambulatory surgery center (free standing)
- ☐ Other — Specify

Other types of settings

- ☐ Home health agency/service
- ☐ Occupational health or employee health service
- ☐ Public health or community health agency (not a clinic)
- ☐ Government agency other than public/community health or correctional facility
- ☐ Outpatient dialysis center
- ☐ University or college academic department
- ☐ Insurance company
- ☐ Call center/telenursing center
- ☐ Other — Specify

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Figure 15: Employment settings question with “Other/specify” fields disabled as the default view.

The heat map associated with this question in Figure 16 supports the observation that the grey other box appeared to serve as a visual stop sign in this design, shaping this misunderstanding of the question. Very few people looked at the grey box and most of the reading time was spent in the first section of the response choices.

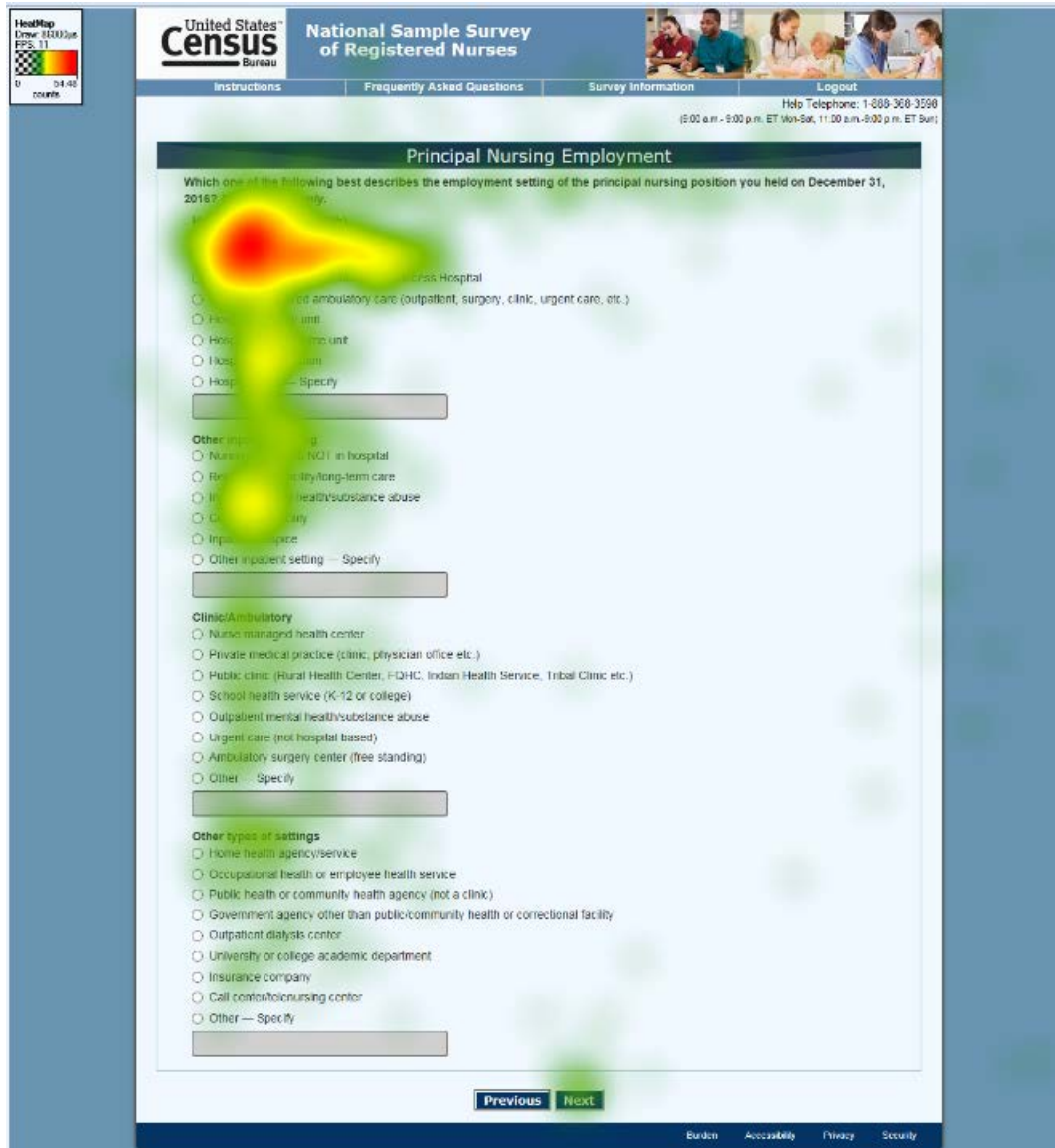


Figure 16: Heat map using seven participants data on the employment setting question. The large red area at the top of the list is over the confusing response item of Critical Access Hospital (See PowerPoint slide #58 in Attachment B). However, also see very few fixations in the “Other/specify” write-in fields.

We calculated the mean number of fixations on this question (136.4 with a range of 3 to 500 and a standard deviation of 187) and the mean total duration of those fixations (19.8 seconds with a range of .25 to 69 and a standard deviation of 27) for the seven participants so future iterations of the design could be compared to these numbers to determine if the fixations decrease if the design becomes more understandable to respondents.

On mobile devices, the problem was magnified as it looked like the end of the response choice list was the grey “Other/specify” write-in field as shown in Figure 17. In that picture, only the first section of the list shows and the grey box is at the bottom of the screen.



Figure 17: Screen shot of actual survey instrument used during testing. This picture shows the default view of the employment setting question. Notice that the “Other/specify” write-in fields is at the bottom of the screen.

This question had several problems with it, including confusing terminology and a design that made it look like the participant had to choose one option from each list. However, the grey write-in box directly below the “Other” response choice seemed to add to the confusion. Placing the grey boxes to the right of the “Other” choice as it was in Figure 13 above, instead of below the choice, might have helped the participant visually navigate the response choices; however, we cannot assume that it would have addressed the entire issue. We also cannot say whether having white write-in boxes for this design would have helped indicate that there was more to the list.

Following the usability testing, the program managers decided to implement two-step questions using a page-based design for this employment setting question. Respondents are first asked to categorize their employment setting into four categories (see Figure 18) and then they are branched to the correct subsequent page that asks for a more detailed employment setting within that category (see Figure 19 for an example screen).

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Primary Nursing Employment

Which one of the following best describes the employment setting of the primary nursing position you held on December 31, 2017? Select one response only.

- ☒ Hospital (not mental health)
- ☐ Other inpatient setting
- ☐ Clinic/ambulatory
- ☐ Other types of settings

Figure 18: 2018 NSSRN webpage for employment setting

Primary Nursing Employment

Which one of the following best describes the hospital (not mental health) setting of the primary nursing position you held on December 31, 2017? Select one response only.

- ☐ Critical Access Hospital (CAH) - a rural community hospital that receives cost-based reimbursement from Medicare
- ☐ Inpatient unit, not Critical Access Hospital
- ☐ Emergency Department, not Critical Access Hospital
- ☐ Hospital sponsored ambulatory care (outpatient, surgery, clinic, urgent care, etc.)
- ☐ Hospital ancillary unit
- ☐ Hospital nursing home unit
- ☐ Hospital administration
- ☐ Hospital other, --- Specify

Figure 19: This screen shot is an example of the follow-up question if a respondent selects that “Hospital (not mental health)” best describes their employment setting. This page contains that response options that were formerly placed under the “Hospital (not mental health)” subhead in the original design for the question. In addition to changing the design of the question, response options were also changed to help clarify some of the response categories.

5.2. Skipping entire questions

On four webpages, entire questions were disabled until the participant selected a choice to the filter question, which enabled the subsequent questions. These four screens contained the types of skip sequences that another survey designer might have put on separate webpages. As an example of how these screens looked, Figure 20 shows the view of one webpage upon first access. The subsequent question task was initially disabled. It was enabled when the participant reported that he or she had an additional academic degree as shown in Figure 21. If the participant reported no additional academic degree, the subsequent question task stayed disabled. On all four of these types of webpages, we observed no issues with participants understanding that the disabled section did not apply to them. We did not observe anyone trying to answer in the greyed out question area.

For this particular question, three participants, for whom we had eye tracking data, did not have another degree and were then able to select “Next” and move forward. The heat map in Figure 22 shows very few fixations in the disabled areas of the screen for those participants, suggesting that participants knew that they did not have to spend time reading that section. However, there are a few fixations denoted by the light green, meaning that participants saw the text. The mean count of fixations on the entire page for two of the three individuals was 69 with a standard deviation of 35 and a range of 44 to 94¹. The mean count of fixations within the disabled text area was 12 with a standard deviation of 8 and a range of 6 to 12. For this group of individuals, 17 percent (12/69) of the fixations on the page were in the disabled area.

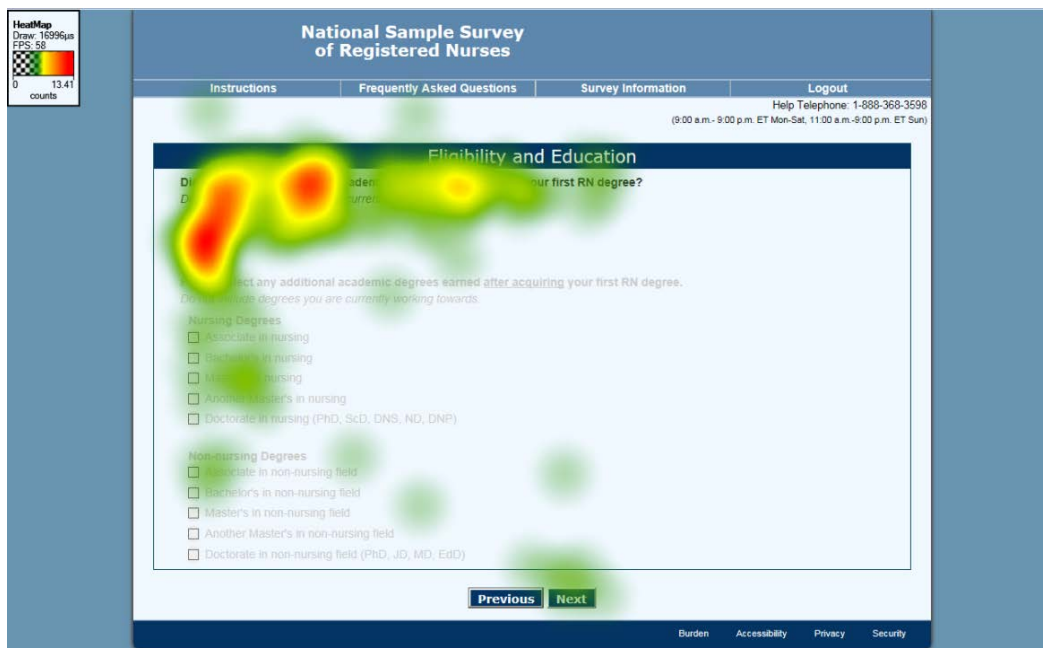


Figure 22: This includes three participants who answered "no" and did not have another degree.

The other four participants, for whom we had eye tracking data, had another degree. The heat map in Figure 23 shows that those participants focused on the enabled questions². The mean count of fixations on the entire page for these four participants was 99 with a standard deviation of 49 and a range of 26 to 134. The mean fixations within the disabled text area was 73 with a standard deviation of 37 and a range of 21 to 101. Overall, 74 percent (73/99) of the fixations on the page were in the disabled/re-enabled area.

¹ The third participant who answered the filter question with “No” had only one fixation recorded on this particular screen and therefore we excluded these data as it was an outlier.

² In the Tobii software, only the default screen is shown as the background in the heat map, but the fixations are from the entire time the page was visible, including when the questions were enabled.

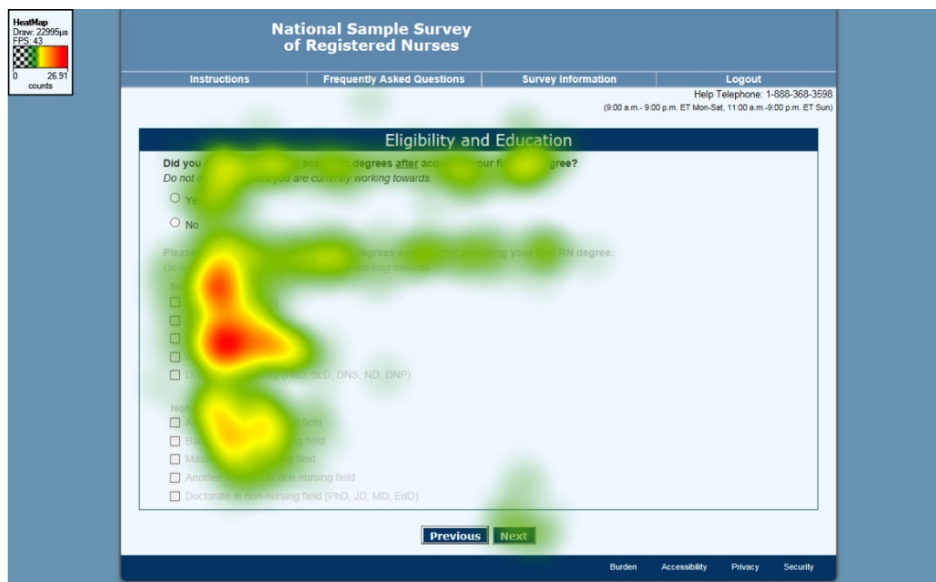


Figure 23: This includes 4 participants who answered “yes” that they did have another degree. The image is made with the default disabled text, but the page changed dynamically and was enabled for these four participants.

For this webpage, the eye tracking data matched the observation that participants appeared to understand that the grey area did not apply to them, but the re-enabled area did. The mobile view of the question is not different from the PC design as shown in Figure 24. Participants using their mobile devices also understood that the grey text did not apply to them and were able to navigate past the grey fields and text to the navigational buttons at the bottom of the page.

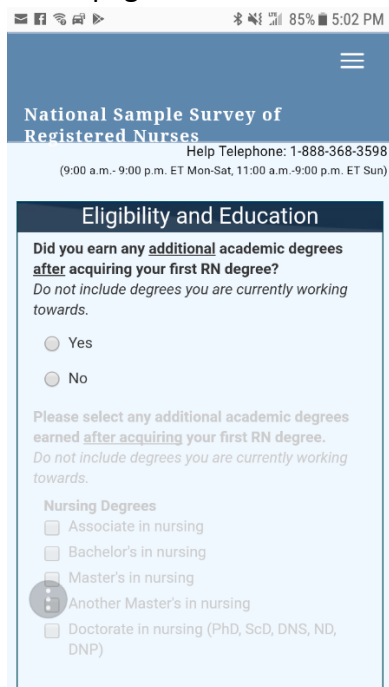


Figure 24: Types of additional degree questions default view for a mobile phone

Another of the four webpages with disabled and re-enabled questions was about enrollment in an education program and is shown in Figure 25. This series contained five questions, one filter question, and four sub-questions which were enabled if the participant selected one of the “Yes” response options indicating that he or she was enrolled in a formal education program. On PC and on mobile, the participant had to scroll to see all of the questions and to get to the “Next” navigation button. Like the prior example, all participants appeared to understand that the grey meant the questions did not apply to them.

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Eligibility and Education

During the **Fall term of 2016**, were you enrolled in a formal education program leading to an academic degree or certificate?

☐ Yes, in nursing

☐ Yes, in a non-nursing field

☐ No

Were you a full-time or part-time student?

☐ Full-time student

☐ Part-time student

What percentage of your coursework in this program was distance-based (online or correspondence)?

☐ ≤ 50%

☐ > 50%

What type of degree or certificate were you working toward in this program?

Mark one box only.

☐ Certificate/Award

☐ Associate Degree

☐ Bachelor's Degree

☐ Master's Degree

☐ Post-Master's Certificate

☐ Doctorate - (PhD)

☐ Doctorate - (DNP)

☐ Doctorate - other

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Figure 25: Educational enrollment questions default view for PC

We observed one participant initially selecting “no” that she was not enrolled in an education series to the filter question, but then changed her answer to that question because she read the grey question about online courses. She realized that the survey considered online courses to be part of an educational program, which was not her original understanding. Her behavior was the opposite of what other researchers had feared about allowing the respondent to see the skip sequence. Instead of answering the filter question in such a way as to receive fewer questions, this participant actually answered more questions, and answered them more accurately than had there been only one question per screen. Had that been the design, the participant most likely would not have changed her answer to the filter question because she would not have

seen the subsequent question about online courses and would have stayed with her original understanding of the question that the qualifying educational programs were classroom-based. This behavior can be compared to another participant who was answering a page-based section of the survey. One of the questions in that section was so difficult (see PowerPoint slide #46 in Attachment B) that she navigated back to the original filter question and changed her answer so that she would not answer the subsequent questions. Thus, having a page-based design does not necessarily eliminate intentionally reporting incorrectly to avoid subsequent questions.

While we do not have the eye tracking data for the participant who changed her answer to the filter question, we do have the eye tracking data for the six participants who answered no to the filter question (Figure 26) and one participant who answered yes to the filter question (Figure 27). Again the pattern is similar to the prior example with participants seeing the grey disabled text, but not focusing greatly on it when it is disabled.

For the six participants who answered “no” and did not enable the remaining questions, the mean count of fixations on the entire page was 38 with a standard deviation of 31 and a range of 7 to 82. The mean fixations within the disabled text area was 6 with a standard deviation of 5.5 and a range of 1 to 13. Overall, 16 percent (6/38) of the fixations on the page were in the disabled/re-enabled area. These data can be compared to the data from the participant who answered “yes” to the filter question and enabled the remaining questions. That person had 114 fixations total on the page and 56 of those were in the enabled area, so almost half of the fixations were on the enabled questions.

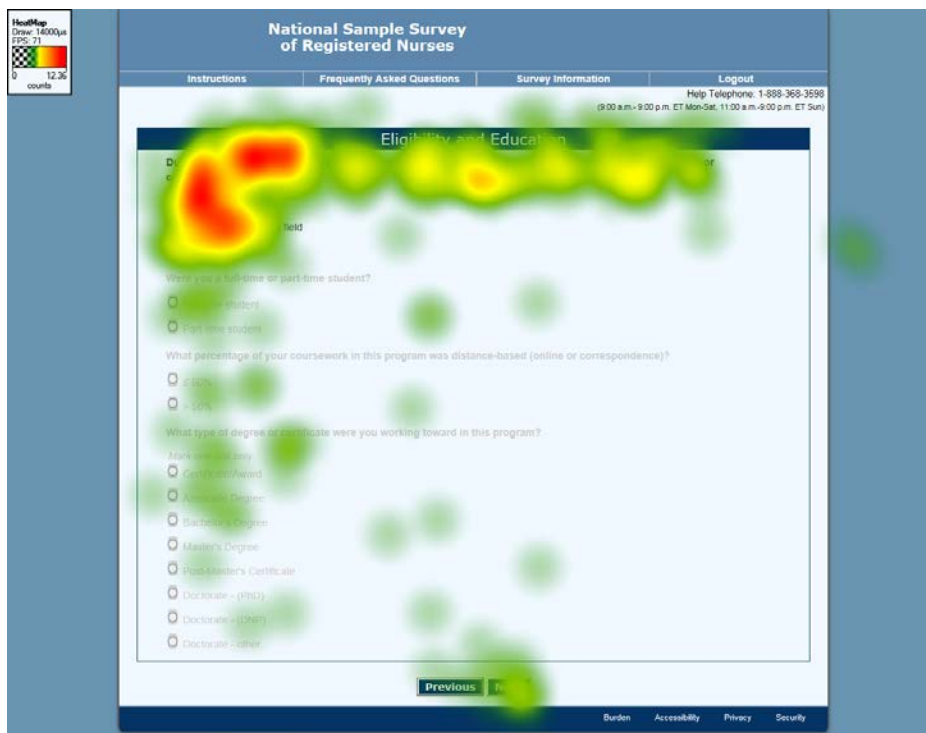


Figure 26: Six participants who answered that they were not enrolled in courses in the fall of 2017 to the filter question and therefore the subsequent questions were not enabled. Notice very few fixations in the disabled text; yet the participants did see the text.

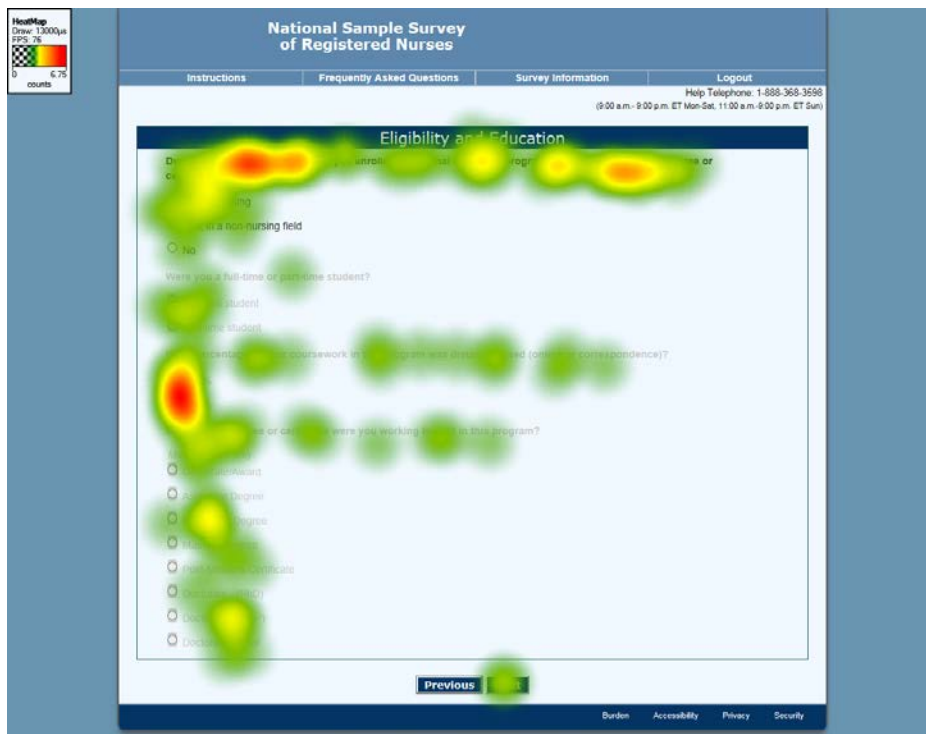


Figure 27: One participant of the seven who were eye tracked did answer yes to the filter question and complete the remainder of the questions on the webpage

5.3. Inconsistent use of disabling and re-enabling question and response text in the NSSRN online instrument used during usability testing

While disabling entire questions and response choices seemed to cause no usability problems for our participants, we did observe user confusion when only the response field was disabled and not the question associated with that field. For example, one screen in the instrument contained a question about whether the respondent had ever left the nursing field, and if so, the subsequent question on the webpage asked how many years he or she had left. Only respondents who answered that they had left the nursing field should have answered for how many years they left. The default screen layout in Figure 28 shows that although the field of the second question was disabled, the question text still appeared on-screen. Of the seven laptop sessions that were eye tracked, no one answered yes that they had left the field of nursing, meaning that they should not have answered the second question; however, video recordings show that two of the seven people, tried to tap in the disabled field. And, it appears, that several of these participants read the second question which was not disabled, even though it did not apply to them, as shown in Figure 29. However, the proportion of fixations in the disabled area to the entire question (14 percent or (2/14.5)) was similar to the earlier design where the disabled text was used. We do not understand why the fixation counts on this question did not match the observation, especially because two participants attempted to answer the disabled question.

Prior Nursing Employment

Have you left work in nursing for one or more years since becoming an RN?

☐ Yes

☐ No

For how many years?

Enter zero if less than one year

Year(s)

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Figure 28: Left nursing position questions default view for PC

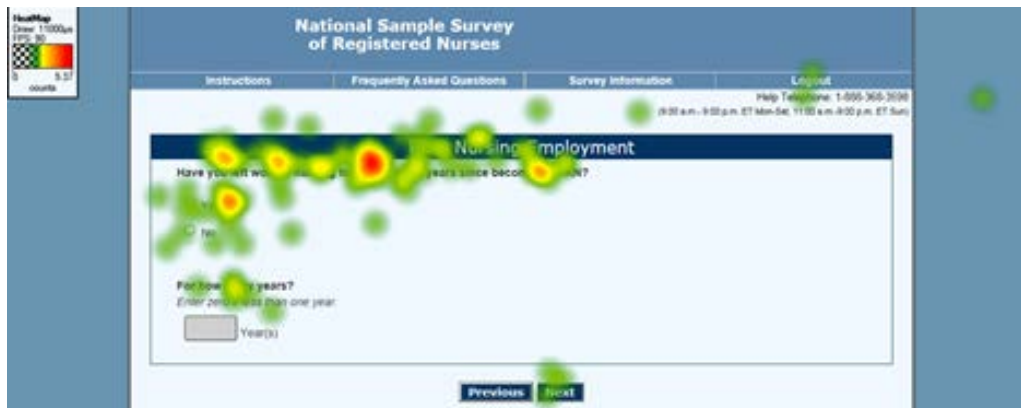


Figure 29 All seven participants, none of whom should have answered the second question on the page

On mobile devices, the same thing happened. In Figure 30, the participant is trying to tap into the disabled field even though she had answered “no” to the previous filter question. While none of these individuals discontinued the survey at this point, nor did they verbally indicate that they

would, it could become a point of frustration for participants. At minimum the design is inconsistent compared to the other four webpages discussed in the prior section.

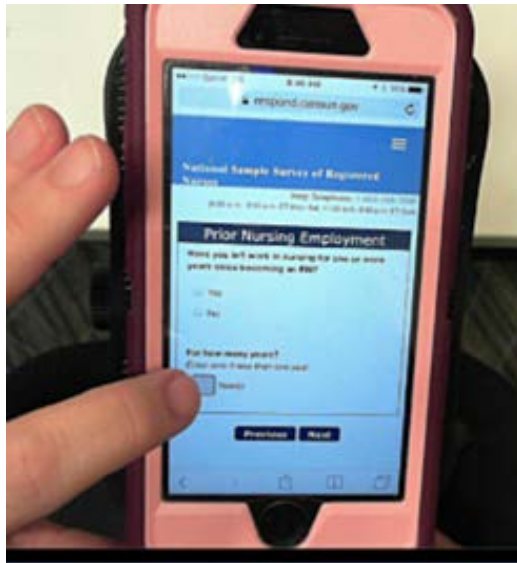


Figure 30: In this picture the participant had answered no and so should not have answered the next question about how many years they had left nursing. However, since the second question was bolded and not greyed, the participant attempted to answer the question

For the 2018 NSSRN production instrument, the screen was revised to ensure that the question text and response label was gray prior to the respondent selecting an answer for the initial question on the page “Have you left work in nursing for one or more years since becoming an RN?” as shown in Figure 31. If the respondent selects “Yes” the response box will become enabled and the question text and response label text will change to black font to indicate that the respondent should answer this follow-up question, as shown in Figure 32.

Figure 31: Revised screen for the 2018 NSSRN with the subsequent question text and response field disabled as the default view

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Prior Nursing Employment

Have you left work in nursing for one or more years since becoming an RN?

☒ Yes
☐ No

For how many years? Enter zero if less than one year.

Year(s)

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Form: H5SRN
OMB No.: 0607-1002
Approval Expires: 01/31/2021


Burden Accessibility Privacy Security

Figure 32: The subsequent question and field become enabled if "yes" is selected

We observed a similar problem when only the response field was disabled and not the field question or label. This happened several times on screens that required either the state or country, but not both. All participants answered their state and then the next field was country. Once a state was selected, the country field became disabled, but not the question as shown in Figure 33. On several screens with this design, participants tried repeatedly to answer the country question, without success because they did not realize the field was disabled. The user-problem was magnified because on the first occurrence of this type of question, the country field was enabled, and so participants expected that they were supposed to answer both state and country on every screen where it was available. The eye tracking heat map in Figure 34 confirms that for the 3 participants who received this particular screen, they spent time on the disabled question and tried to answer it. The mean number of fixations on the entire page was 116 with a range of 23 to 183, and the mean number of fixations on that disabled area was 18, with a range of 2 to 32. So, for this screen, about 26 percent of all the fixations were in the disabled area.

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Eligibility and Education

The following questions refer to your Master's degree in nursing.

In what year did you receive this degree?

Year

Was this program located in the United States?

☒ Yes

☐ No

In what U.S. state was this program located?

Alabama

In what country was this program located?

Select country

Was 50% or more of the coursework for this degree online or through correspondence?

☐ Yes

☐ No

What was the primary focus of this degree?

☐ Clinical Practice

☐ Clinical Nurse Leader

☐ Administration/Business Management

☐ Education

☐ Public Health/Community Health

☐ Law

☐ Biological or Physical Sciences

☐ Humanities, Liberal Arts, or Social Sciences

☐ Information Technology/Informatics

Figure 33: Example of a question where the state is selected, which triggered the country field to be disabled, but the country question remained enabled.

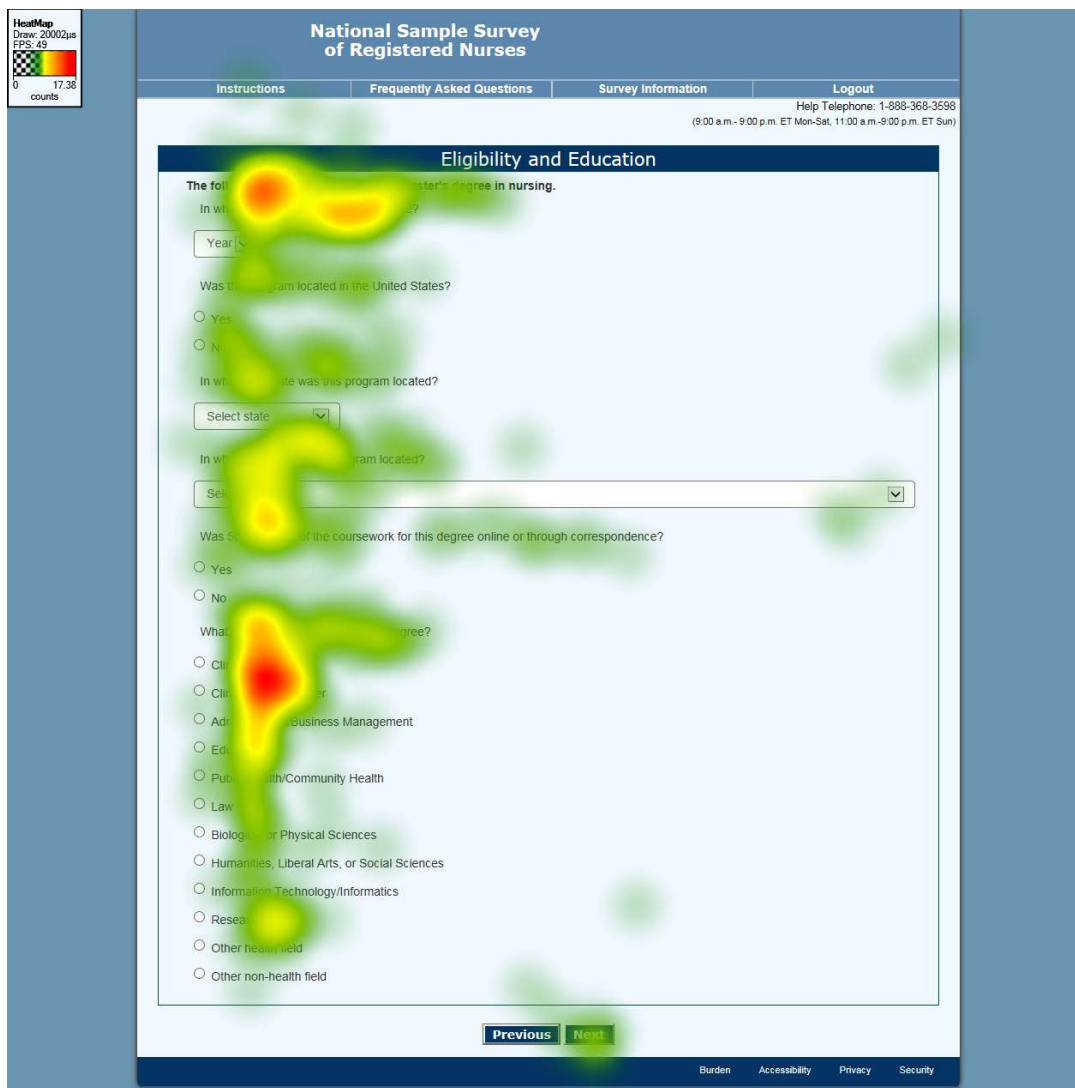


Figure 34: Same question for three participants who selected a state and the country field was disabled but not the field question.

5.4. Multi-part questions which might have benefitted from disabling and re-enabling question and response text

Disabling and re-enabling might have helped participants navigate the question about where they received their degree. That question was a multi-part question, where the respondent is supposed to select U.S. or outside of the U.S. and then provide more details regarding the state or the country, depending on the first answer. However, the two questions are visually intertwined as shown in Figure 35. Instead of having a separate second question below the first question, part of the second question is beneath the first response to the first question and the other part of the second question is beneath the second response to the first question. There was no disabled or enabled text or fields used on this webpage. One participant reported “In the United States” and the state and then also selected a country, which is an error of commission.

Another participant did not select “In the United States” despite selecting the state name, which is an error of omission.

The screenshot shows a web form titled "National Sample Survey of Registered Nurses". At the top, there are navigation links: "Instructions", "Frequently Asked Questions", "Survey Information", and "Logout". Below these links, a help telephone number "1-888-368-3598" is displayed, along with its operating hours: "(9:00 a.m. - 9:00 p.m. ET Mon-Sat, 11:00 a.m.-9:00 p.m. ET Sun)".

The main section of the form is titled "Eligibility and Education". It contains a question: "Where was this program located?". There are two radio button options: "In the United States" and "Outside the United States".

Under the "In the United States" option, there is a label "Select name of state" followed by a dropdown menu labeled "Select state".

Under the "Outside the United States" option, there is a label "Select name of foreign country or U.S. territory" followed by a dropdown menu labeled "Select country".

At the bottom of the form, there are two buttons: "Previous" and "Next".

At the very bottom of the page, there are four links: "Burden", "Accessibility", "Privacy", and "Security".

Figure 35: Multi-part question without enabling or disabling

Eye tracking data confirms the possible confusion since there seems to be some focus on the country label and field (see Figure 36) and yet none of the seven individuals obtained their education outside of the United States. Overall the mean count of fixations was 23.5 with a range of 4 to 48 and the average total fixation duration was 4 seconds with a range of .32 to 9.17 for the seven participants.

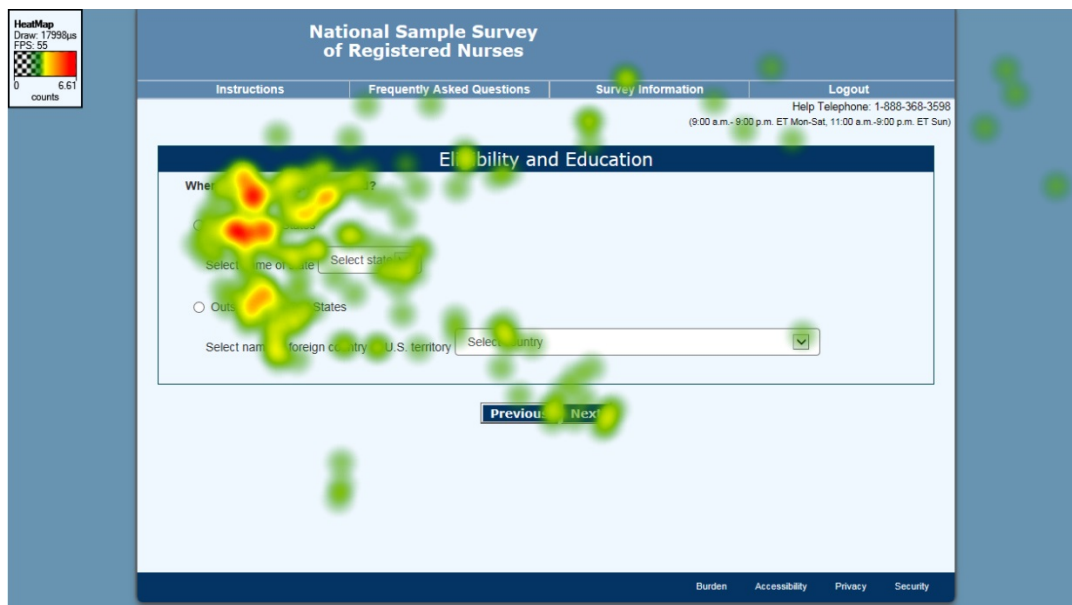


Figure 36: All seven participants, none of whom should have answered the name of the foreign country

For the 2018 NSSRN production, this question was redesigned so that the State and Country drop-down boxes are disabled when the respondent entered the page and they are no longer intertwined within the question; rather, they are below the main question as shown in Figure 37. If the respondent selects “In the United States” for the first question “Where was this program located?” the State drop-down box enables and the country drop-down box remains disabled for the second question as shown in Figure 38. If the respondent selects “Outside of the United States,” the country drop-down box enables and the state drop-down box remains disabled.

Figure 37: Revised screen for the 2018 NSSRN with a reordered design using disabled an enabled text

Figure 38: Redesigned screen showing that the state field enables if in the United States is selected.

5.5. Accessibility of disabled and enabled design for both PC and mobile devices

For PC JAWS users, JAWS encountered and read aloud the grayed out questions, response option labels, and instruction text. The response options are labeled “unavailable.” Talkback on smartphones functioned in the same way, that is, all grayed text and response options were vocalized and only the response options are labeled with “unavailable.” When a screen-reader user encounters a new page or screen, they will typically navigate through the entire listing to determine the layout and how to interact with the screen. Where the sighted user may not read all of the grayed question text once they determine it does not apply, a screen-reader user will not know the text is grayed out until accessing a response option which will be labeled as “unavailable.” Screen-reader users will take longer than sighted users to process this text in the disabled areas. There is no way to skip to the next enabled question automatically for screen-reader users. While this is how the disabled and re-enabled screens functioned, because we did not test with actual screen-reader users, we were unable to get any input from them about their experiences with disabled and enabled text designs.

6. Summary and Discussion

The NSSRN online survey used disabled and re-enabled questions, labels, and fields to indicate skip sequences. This design allowed multiple questions to be on the same webpage in the survey. When entire questions were in skip sequences, the default view on the webpage was that the fields and questions were disabled. During usability testing with this highly educated population, there were no problems observed when both the question text was disabled in addition to the response field. Participants quickly understood that the question did not apply to them. Eye tracking data confirms this observation; participants spent very little time looking at the disabled questions and fields. We did not observe any instance of these participants reporting in such a

way as to purposely reduce the number of additional questions they had to answer. On the contrary, we observed some advantage to having multiple related questions on the same page with the disabled and enabled branching logic design used. For example, we observed one participant scan through the disabled questions and change her answer to the filter question when she saw that one of the disabled questions asked what percent of the educational classes were online. Because she saw the subsequent question (even though it was disabled), she was able to infer that the survey considered online classes within the scope. Had the survey design been implemented with the more traditional one question per screen approach, she would have never seen the subsequent question, and most likely would not have changed her original answer.

However, we also observed that if the question or label was enabled (meaning it was black and not grey) and just the field was disabled, then participants became confused because they tried to answer the question, even when it did not apply to them. In these cases, the response field would not accept an answer. This observation was also confirmed with eye tracking data. While eventually everyone moved on within the survey, the experience was frustrating and therefore we recommend that when enabling and disabling is used, both the question and the response field should appear the same way.

When there is a filter question, then the subsequent questions should be disabled until an answer to the filter question triggers the subsequent questions, and then both the label and field should be enabled. This prevents respondents from answering out of order. When there are two related questions, like which state or country, and no filter question, then both fields and labels/questions should be enabled as the default. If the respondent selects a state, then both the country field and the country label/question should be disabled and if the respondent selects a country, then both the state field and state label/question should be disabled. The design needs to be flexible enough to allow a respondent to change their answer to the state and/or country so that the other field re-enables in the situation that a response was made in error.

For the “Other/specify” fields, again this highly educated group of participants understood that unless the “Other” response choice was selected, they did not have to enter data into the write-in (or type-in) field. However, the grey box below the other response choice did serve as a stopping point for the group of response choices. This was a problematic design when there were several sections of response choices and an “Other/specify” field for each section. Participants assumed they had to choose one response for each section.

To our knowledge, there has not been extensive research on enabling and disabling questions within a survey to indicate skip sequences. This report provides a source for documenting this skip sequence solution as it relates to usability and user experience. It does not make any claims about the impact of the design on the resulting survey response distributions as the research was qualitative in nature.

7. Limitations

The group of participants who interacted with the online survey was highly educated. We cannot generalize to other groups of respondents. The methodology when testing mobile device changed mid-way through the testing period. Some participants placed their phone on a Tobii mobile device stand while answering the survey, while others held their phone while answering the survey. Although we observed no noticeable differences in usability problems uncovered using either method, there are advantages and limitations of both. Using the mobile stand means that participants do not hold their phone. Any usability difficulties they have in simultaneously holding their phone and answering the survey will not be observed. We also observed more index finger use when the phone was on the stand rather than free held. Some users use their thumb to select answers or navigational buttons. No users used their thumb when using the mobile device stand. Any usability issues with making selections or navigating using a thumb touch will not be observed when using the mobile device stand. While using the free held method is how users would answer the survey in real life, occasionally we could not observe the interaction of the participant with the phone screen because of the angle the participant held the device or because the participant readjusted the position of the device so that it was outside of the camera view. In these instances, we had to ask the participant to tilt or move the phone to a position so that we could capture the device on the recording. Both the stand and the free-held methods disrupt the natural method of completing the survey, but neither method seemed to affect usability issues observed nor the interaction with the branching design used.

8. Future usability research on designing for branching logic

Repeating this study, or a similar study using enabling and disabling with a different respondent pool would aid in determining if the disable and re-enable design is universally understood.

Because we have gathered some eye tracking data, it would be useful to repeat the usability sessions with the revised NSSRN online instrument to determine whether disabling both the question text and response field reduces the number and duration of the fixations on those screens where only the response field (and not the question text) was disabled during usability testing. Likewise, it would be interesting to test a modification of the ACS screen with the pop-up question to an enabling and disabling design to see which design works better for respondents.

Future work should also examine the distribution of responses to filter questions and include some kind of validation data source to determine whether respondent answer those questions accurately or whether they answer them to avoid subsequent questions.


9. Acknowledgements

We thank the staff of Elizabeth Sinclair and Daniel Doyle in ADDP for the opportunity to usability test the NSSRN and learn about respondent interactions with the disable and enable functionality. We also thank our reviewers including Elizabeth Sinclair, Chris Stringer, Lin Wang, Joanne Pascale, and Paul Beatty.


10. References



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Attachment A: Paper version of the NSSRN containing questions used in usability testing of the online NSSRN



**2018 NATIONAL
SAMPLE SURVEY OF REGISTERED NURSES**



Start Here

Respond online today at:
<https://respond.census.gov/nssrn>

OR

Complete this form and mail it back as soon as possible.

The 2018 National Sample Survey of Registered Nurses (NSSRN) is being conducted by the United States Census Bureau on behalf of the Health Resources and Services Administration of the U.S. Department of Health and Human Services and is the tenth cycle of the survey.

We appreciate your help with this important survey. If you need help or have questions about completing this form, please call 1-888-369-3598 or email us at NSSRN@census.gov.

FORM NSSRN
(05/06/2017)

**Section A.
Eligibility and Education**

A1a. On December 31, 2017, were you actively licensed to practice as a Registered Nurse (RN) in any U.S. state or the District of Columbia (whether or not you were employed in nursing at that time)?

☐ Yes
☐ No → If No, you do not need to complete this questionnaire. Please mark "No" and return this questionnaire in the envelope provided so we know you are not eligible.

A1b. What state(s) issued the license(s)? List up to 4.

State State State State

☐ Check this box if you were issued a license by more than 4 states.

CMR No. 0807-0282; Approved Expires 08/20/2017

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A2. In what state and year were you issued your first U.S. RN license?

State Year

A3. Which type of nursing degree qualified you for your first U.S. RN license? Mark one box only.

☐ Diploma
☐ Associate
☐ Bachelor's
☐ Master's
☐ Doctorate - PhD
☐ Doctorate - DNP
☐ Other

A4. In what month and year did you graduate from this RN program?

Month Year

A5. Where was this program located?

☐ In the U.S. Print state abbreviation. →

☐ Outside the U.S. Print name of foreign country or U.S. territory. →

A6. What post-high school degree(s) did you receive before starting your first RN program? Mark all that apply.

☐ Associate
☐ Bachelor's
☐ Master's
☐ Doctorate
☐ Other
☐ None

A7. Have you ever been licensed as a Licensed Practical Nurse (LPN) or Licensed Vocational Nurse (LVN) in the U.S.?

☐ Yes
☐ No

A8. Were you ever employed in any of the following health-related jobs before completing your first RN program? Mark all that apply.

☐ Nursing aide or nursing assistant
☐ Home health aide or assistant
☐ Licensed Practical or Vocational Nurse
☐ Community health worker
☐ Midwife
☐ Other health-related job
☐ Not employed in any health-related jobs before RN

A9. How did you finance your first RN degree? Mark all that apply.

☐ Self-financed
☐ Employer tuition reimbursement plan
☐ Department of Veterans Affairs employer tuition plan
☐ Health Resources and Services Administration Support (e.g., National Health Service Corps, Nurse Corps Loan Repayment, Faculty Loan Repayment)
☐ Other federal fellowship, scholarship, or grant
☐ Federally-assisted loan
☐ Other type of loan
☐ State/local government scholarship or grant
☐ Non-government scholarship or grant
☐ Other resources

2

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A10. Did you earn any additional academic degrees after acquiring your first RN degree that you described in Question A3? Do not include degrees you are currently working towards.

☐ Yes → Please complete all rows of the table below for each degree you earned
☐ No → SKIP to Question A11 on page 4

	Nursing Degrees				
	Associate in nursing	Bachelor's in nursing	Master's in nursing	Another Master's in nursing	Doctorate in nursing (PhD, EdD, DNSc, etc.)
A10a. In what year did you receive this degree?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10b. In what U.S. state or foreign country was this program located?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10c. Was 50% or more of the coursework for this degree online or through correspondence?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
A10d. What was the primary focus of this degree? Enter two-digit code from the table at the bottom of the page.	N A	N A	<input type="text"/>	<input type="text"/>	<input type="text"/>

	Non-nursing Degrees				
	Associate (Non-nursing)	Bachelor's (Non-nursing)	Master's (Non-nursing)	Another Master's (Non-nursing)	Doctorate in non-nursing field (PhD, EdD, MEd, etc.)
A10a. In what year did you receive this degree?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10b. In what U.S. state or foreign country was this program located?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10c. Was 50% or more of the coursework for this degree online or through correspondence?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
A10d. What was the primary focus of this degree? Enter two-digit code from the table below.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Primary focus of degree		
01 Clinical Practice	06 Public Health/Community Health	09 Information Technology/Informatics
02 Clinical Nurse Leader	07 Law	10 Research
03 Administration/Health Management	08 Biological or Physical Sciences	11 Other health field
04 Education	09 Humanities, Liberal Arts, or Social Sciences	12 Other non-health field

A11. After acquiring your first RN degree, which you described in Question A3, have you completed a formal U.S. education program preparing you to be a Nurse Practitioner, Clinical Nurse Specialist, Nurse-Midwife, or Nurse Anesthetist?

☐ Yes
☐ No → SKIP to Question A12a

	Nurse Practitioner	Clinical Nurse Specialist	Nurse-Midwife	Nurse Anesthetist
A11a. Did you receive preparation as a...? Mark each column if yes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A11b. What was the highest credential you received in that program?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Certificate/Award	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Bachelor's Degree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Master's Degree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Post-Master's Certificate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Doctorate - PhD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Doctorate - DNP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Doctorate - other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A11c. In what year did you receive this credential?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

A12a. During the Fall term of 2017, were you enrolled in a formal education program leading to an academic degree or certificate?

☐ Yes, in nursing
☐ Yes, in a non-nursing field
☐ No → SKIP to Section B on page 5

A12b. Were you a full-time or part-time student?

☐ Full-time student
☐ Part-time student

A12c. What percentage of your coursework in this program was distance-based (online or correspondence)?

☐ < 50%
☐ > 50%

A12d. What type of degree or certificate were you working toward in this program? Mark one box only.

☐ Certificate/Award
☐ Associate Degree
☐ Bachelor's Degree
☐ Master's Degree
☐ Post-Master's Certificate
☐ Doctorate - PhD
☐ Doctorate - DNP
☐ Doctorate - other

Continue to Section B

3

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Attachment A: Paper version of the NSSRN containing questions used in usability testing of the online NSSRN

<div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc; margin-bottom: 10px;"> <p style="text-align: center;">Section B. Principal Nursing Employment</p> </div> <p>B1. On December 31, 2017, were you employed or self-employed in nursing? <i>Employed in nursing includes working for pay in nursing, even if on temporary leave.</i></p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section F on page 13</p> <p><i>For all the questions in this section (Questions B2 - B30), your principal nursing position is the nursing position, on December 31, 2017, in which you spent the largest share of your working hours.</i></p> <p>B2. Where was the location of the principal nursing position you held on December 31, 2017? <i>If you were not employed in a fixed location, enter the location that best reflects where you practiced.</i></p> <p>City/Town: <input style="width: 100%;" type="text"/> County: <input style="width: 100%;" type="text"/> State (or country if not U.S.A.): <input style="width: 100%;" type="text"/> Zip: <input style="width: 100%;" type="text"/></p> <p>B3. Thinking about the principal nursing position you held on December 31, 2017, had you been working for <u>this employer</u> for less than 5 years?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Question B7</p> <p>B4. How long were you actively looking for new employment before accepting a position with this employer?</p> <p><input type="checkbox"/> 1 - 6 months <input type="checkbox"/> 7 - 12 months <input type="checkbox"/> More than a year</p> <p>B5. Did you go through an orientation program for the principal nursing position you held on December 31, 2017?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Question B7</p> <p>B6. Did you have a preceptor assigned to you during this orientation program?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>B7. Were you required to maintain an active RN license for the principal nursing position you held on December 31, 2017?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>B8. In your principal nursing position did you use an Electronic Health Record (EHR) or Electronic Medical Record (EMR) system? <i>Do not include billing record systems.</i></p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know</p> <p>B9. What type(s) of training have you received to facilitate team-based care? <i>Team-based care refers to comprehensive health services by at least two health professionals working collaboratively to provide safe, quality care. Mark all that apply.</i></p> <p><input type="checkbox"/> Formal classroom training at my college or university <input type="checkbox"/> Formal classroom training offered by my place of employment <input type="checkbox"/> Online educational videos offered by my place of employment <input type="checkbox"/> Informal training (e.g., on the job) <input type="checkbox"/> No training at all <input type="checkbox"/> Other, Specify: <input style="width: 100%;" type="text"/></p>	<p>B10. For the principal nursing position you held on December 31, 2017, which of the following best describes your employment situation? <i>Mark one box only.</i></p> <p><input type="checkbox"/> Employed through an employment agency as a traveling nurse <input type="checkbox"/> Employed through an employment agency, but not as a traveling nurse <input type="checkbox"/> Employed by the organization or facility at which I was working <input type="checkbox"/> Self-employed, per-diem, or working as-needed</p> <p>B11. For the principal nursing position you held on December 31, 2017, did you work full-time or part-time? <i>Mark one box only.</i></p> <p><input type="checkbox"/> Full-time (including full-time for an academic year) <input type="checkbox"/> Part-time (including working only part of the calendar or academic year)</p> <p>B12. For the principal nursing position you held on December 31, 2017, how many months did you normally work per year?</p> <p><input style="width: 50px;" type="text"/> months per year</p> <p>B13. Which one of the following best describes the employment setting of the principal nursing position you held on December 31, 2017? <i>Mark one box only.</i></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Hospital (not mental health)</p> <p><input type="checkbox"/> Critical Access Hospital <input type="checkbox"/> Inpatient unit, not Critical Access Hospital <input type="checkbox"/> Emergency Department, not Critical Access Hospital <input type="checkbox"/> Hospital sponsored ambulatory care (outpatient, surgery, clinic, urgent care, etc.) <input type="checkbox"/> Hospital ancillary unit <input type="checkbox"/> Hospital nursing home unit <input type="checkbox"/> Hospital administration <input type="checkbox"/> Hospital other, Specify: <input style="width: 100%;" type="text"/></p> <p>Other inpatient setting</p> <p><input type="checkbox"/> Nursing home unit NOT in hospital <input type="checkbox"/> Rehabilitation facility/long-term care <input type="checkbox"/> Inpatient mental health/substance abuse <input type="checkbox"/> Correctional facility <input type="checkbox"/> Inpatient hospice <input type="checkbox"/> Other inpatient setting, Specify: <input style="width: 100%;" type="text"/></p> </div> <div style="width: 48%;"> <p>Clinic/Ambulatory</p> <p><input type="checkbox"/> Nurse managed health center <input type="checkbox"/> Private medical practice (clinic, physician office, etc.) <input type="checkbox"/> Public clinic (Rural Health Center, FQHC, Indian Health Service, Tribal Clinic, etc.) <input type="checkbox"/> School health service (K-12 or college) <input type="checkbox"/> Outpatient mental health/substance abuse <input type="checkbox"/> Urgent care (not hospital based) <input type="checkbox"/> Ambulatory surgery center (free standing) <input type="checkbox"/> Other, Specify: <input style="width: 100%;" type="text"/></p> <p>Other types of settings</p> <p><input type="checkbox"/> Home health agency/service <input type="checkbox"/> Occupational health or employee health service <input type="checkbox"/> Public health or community health agency (not a clinic) <input type="checkbox"/> Government agency other than public/community health or correctional facility <input type="checkbox"/> Outpatient dialysis center <input type="checkbox"/> University or college academic department <input type="checkbox"/> Insurance company <input type="checkbox"/> Call center/telemedicine center <input type="checkbox"/> Other, Specify: <input style="width: 100%;" type="text"/></p> </div> </div>
<p>5</p> <p>27028208</p>	<p>6</p> <p>27028190</p>
<p>B14. Next, we will ask for information about how much you worked in a typical week for the principal nursing position you held on December 31, 2017. <i>Include on-call hours except on-call hours that were standby only.</i></p> <p style="text-align: right; margin-right: 50px;"><i>Hours (enter 0 if none)</i></p> <p>a. Number of hours <u>scheduled</u> in a typical week: <input style="width: 50px;" type="text"/></p> <p>b. Number of hours <u>worked</u> in a typical week: <input style="width: 50px;" type="text"/></p> <p>c. Number of hours paid at the following rates in a typical week:</p> <p>1. Regular hourly rate or salary: <input style="width: 50px;" type="text"/></p> <p>2. Overtime: <input style="width: 50px;" type="text"/></p> <p>d. Number of hours unpaid in a typical week: <input style="width: 50px;" type="text"/></p> <p>B15. For the principal nursing position you held on December 31, 2017, please estimate the percentage of your time spent in the following activities during a typical workweek. <i>Do not use decimals.</i></p> <p>a. Patient care and charting: <input style="width: 50px;" type="text"/> %</p> <p>b. Care coordination (including consultation with agencies and/or professionals): <input style="width: 50px;" type="text"/> %</p> <p>c. Management, supervision, and administrative tasks: <input style="width: 50px;" type="text"/> %</p> <p>d. Research: <input style="width: 50px;" type="text"/> %</p> <p>e. Teaching, precepting or orienting students or new hires (include preparation time): <input style="width: 50px;" type="text"/> %</p> <p>f. Non-nursing tasks (e.g. housekeeping, locating supplies): <input style="width: 50px;" type="text"/> %</p> <p>g. Other: <input style="width: 50px;" type="text"/> %</p> <p style="text-align: right;">Total = 100%</p> <p>B16. For the principal nursing position you held on December 31, 2017, in what level of care or type of work did you spend most of your time? <i>Mark all that apply.</i></p> <p><input type="checkbox"/> General or specialty inpatient <input type="checkbox"/> Ambulatory care (including primary care outpatient settings, except surgical) <input type="checkbox"/> Ancillary care (radiology, laboratory) <input type="checkbox"/> Care coordination/patient navigation <input type="checkbox"/> Critical/intensive care <input type="checkbox"/> Education <input type="checkbox"/> Emergency <input type="checkbox"/> Health care management/administration <input type="checkbox"/> Home health/hospice <input type="checkbox"/> Informatics <input type="checkbox"/> Long-term care/nursing home <input type="checkbox"/> Public health/community health <input type="checkbox"/> Rehabilitation <input type="checkbox"/> Research <input type="checkbox"/> Step-down, transitional, progressive, telemetry <input type="checkbox"/> Sub-acute care <input type="checkbox"/> Surgery (including ambulatory, pre-operative, post-operative, post-anesthesia) <input type="checkbox"/> Urgent care <input type="checkbox"/> Other, Specify: <input style="width: 100%;" type="text"/></p>	<p>B17a. Did the principal nursing position you held on December 31, 2017, include any <u>patient care</u>?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Question B18 on page 9</p> <p>B17b. For the principal nursing position you held on December 31, 2017, please estimate the percentage of your <u>patient care</u> time spent with each population below. <i>Do not use decimals.</i></p> <p>Pre-natal: <input style="width: 50px;" type="text"/> %</p> <p>Newborn or Neonatal (less than 2 years old): <input style="width: 50px;" type="text"/> %</p> <p>Pediatric (2 to 11 years old): <input style="width: 50px;" type="text"/> %</p> <p>Adolescent (12 to 17 years old): <input style="width: 50px;" type="text"/> %</p> <p>Adult (18 to 65 years old): <input style="width: 50px;" type="text"/> %</p> <p>Geriatric (more than 65 years old): <input style="width: 50px;" type="text"/> %</p> <p style="text-align: right;">Total = 100%</p> <p>B17c. For the principal nursing position you held on December 31, 2017, in what type of clinical specialty did you spend most of your <u>patient care</u> time? <i>Mark one box only.</i></p> <p><input type="checkbox"/> General medical surgical <input type="checkbox"/> Ambulatory care <input type="checkbox"/> Cardiac or cardiovascular care <input type="checkbox"/> Chronic care <input type="checkbox"/> Critical care <input type="checkbox"/> Dermatology <input type="checkbox"/> Emergency or trauma care <input type="checkbox"/> Endocrinology <input type="checkbox"/> Gastrointestinal <input type="checkbox"/> Gynecology (women's health) <input type="checkbox"/> Home health/hospice <input type="checkbox"/> Infectious/communicable disease <input type="checkbox"/> Labor and delivery <input type="checkbox"/> Neurological <input type="checkbox"/> Obstetrics <input type="checkbox"/> Occupational health <input type="checkbox"/> Oncology <input type="checkbox"/> Ophthalmology <input type="checkbox"/> Orthopedics <input type="checkbox"/> Otolaryngology (ear, nose and throat) <input type="checkbox"/> Primary care <input type="checkbox"/> Psychiatric or mental health (substance abuse and co-occurring) <input type="checkbox"/> Pulmonary/respiratory <input type="checkbox"/> Radiology (diagnostic or therapeutic) <input type="checkbox"/> Renal/dialysis <input type="checkbox"/> Other specialty, Specify: <input style="width: 100%;" type="text"/></p>
<p>7</p> <p>27028182</p>	<p>8</p> <p>27028174</p>

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Attachment A: Paper version of the NSSRN containing questions used in usability testing of the online NSSRN

Section E. Secondary Employment in Nursing																	
<p>E1. Aside from the principal nursing position you just described, did you hold any other positions in nursing for pay on December 31, 2017?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Section F</p>	<p>E4. In your other nursing position(s) held on December 31, 2017, please indicate how much you worked, and where the job was located.</p> <table border="1"><thead><tr><th></th><th>Works per year</th><th>Average hours per week, weeks of work</th><th>Location where most work was done (state or country)</th></tr></thead><tbody><tr><td>Additional job #1</td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr><tr><td>Additional job #2</td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr><tr><td>All other jobs</td><td><input type="text"/></td><td><input type="text"/></td><td>N/A</td></tr></tbody></table>		Works per year	Average hours per week, weeks of work	Location where most work was done (state or country)	Additional job #1	<input type="text"/>	<input type="text"/>	<input type="text"/>	Additional job #2	<input type="text"/>	<input type="text"/>	<input type="text"/>	All other jobs	<input type="text"/>	<input type="text"/>	N/A
	Works per year	Average hours per week, weeks of work	Location where most work was done (state or country)														
Additional job #1	<input type="text"/>	<input type="text"/>	<input type="text"/>														
Additional job #2	<input type="text"/>	<input type="text"/>	<input type="text"/>														
All other jobs	<input type="text"/>	<input type="text"/>	N/A														
<p>E2. Which of the following best describes your employment with the other nursing position(s) held on December 31, 2017? Mark all that apply.</p> <p><input type="checkbox"/> Employed through an employment agency as a traveling nurse</p> <p><input type="checkbox"/> Employed through an employment agency, but not as a traveling nurse</p> <p><input type="checkbox"/> Employed by the organization or facility at which I am working</p> <p><input type="checkbox"/> Self-employed, per diem, or working as needed</p>	<p>E5. Please estimate your 2017, pre-tax annual earnings from all of the nursing positions that you reported in Question E4. Do not include earnings from your principal nursing position.</p> <p>\$ <input type="text"/></p>																
<p>E3. What type(s) of work setting(s) best describe where you worked for the other nursing position(s) held on December 31, 2017? Mark all that apply.</p> <p><input type="checkbox"/> Hospital</p> <p><input type="checkbox"/> Nursing home/extended care facility</p> <p><input type="checkbox"/> Academic education program</p> <p><input type="checkbox"/> Home health setting</p> <p><input type="checkbox"/> Public or community health setting</p> <p><input type="checkbox"/> Rehabilitation facility/long-term care</p> <p><input type="checkbox"/> Mental health/substance abuse</p> <p><input type="checkbox"/> School health service</p> <p><input type="checkbox"/> Occupational health</p> <p><input type="checkbox"/> Physician practice (individual or group)</p> <p><input type="checkbox"/> Ambulatory care clinic</p> <p><input type="checkbox"/> Insurance claims/benefits</p> <p><input type="checkbox"/> Telehealth, telemonitoring or call center</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p>	<p>Continue to Section F</p> <p>Section F. Nurse Practitioners</p> <p>F1a. On December 31, 2017, did you have an active certification, licensure, or other legal recognition from a State Board of Nursing to practice as a Nurse Practitioner (NP)?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Section G on page 17</p> <p>F1b. What state(s) issued the license/certification/recognition? List up to 4.</p> <p>State <input type="text"/> State <input type="text"/> State <input type="text"/> State <input type="text"/></p> <p><input type="checkbox"/> Check this box if you were issued certification/licensure/recognition by more than 4 states.</p>																

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<p>F2. On December 31, 2017, in which area(s) were you certified by a national certifying organization for NPs? Mark all that apply.</p> <p><input type="checkbox"/> Acute Care, adult</p> <p><input type="checkbox"/> Acute Care, pediatric</p> <p><input type="checkbox"/> Adult</p> <p><input type="checkbox"/> Family</p> <p><input type="checkbox"/> Gerontology</p> <p><input type="checkbox"/> Neonatal</p> <p><input type="checkbox"/> Pediatric</p> <p><input type="checkbox"/> Psychiatric & Mental Health</p> <p><input type="checkbox"/> Women's Health</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p>	<p>F7. On December 31, 2017, were you employed in any positions that required state certification/licensure/recognition to practice as an NP?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Question F26 on page 16</p> <p>F8. Thinking about the main NP position you held on December 31, 2017, what type of professional relationship did you have with the physician(s) you worked with? Mark all that apply.</p> <p><input type="checkbox"/> In my main NP position, there were no physicians on site</p> <p><input type="checkbox"/> I collaborated with a physician on site</p> <p><input type="checkbox"/> I collaborated with a physician on site</p> <p><input type="checkbox"/> I was considered an equal colleague to the physician(s) I worked with</p> <p><input type="checkbox"/> I was accountable to a physician who served as a medical director</p> <p><input type="checkbox"/> I was supervised by a physician, and I had to accept his/her clinical decision about the patients I saw</p> <p><input type="checkbox"/> A physician saw and signed off on the patients I saw</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p> <p>F9. Thinking of all the NP positions you held on December 31, 2017, indicate your level of agreement with the following statements.</p> <p>F9a. In my NP position(s), I could practice to the fullest extent of my state's legal scope of practice.</p> <p><input type="checkbox"/> Strongly agree</p> <p><input type="checkbox"/> Agree</p> <p><input type="checkbox"/> Disagree</p> <p><input type="checkbox"/> Strongly disagree</p> <p>F9b. In my NP position(s), my NP education was fully utilized.</p> <p><input type="checkbox"/> Strongly agree</p> <p><input type="checkbox"/> Agree</p> <p><input type="checkbox"/> Disagree</p> <p><input type="checkbox"/> Strongly disagree</p>
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<p>F10. In the NP position(s) you held on December 31, 2017, did you provide patient care?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Question F19</p> <p>F10a. Across all of the NP positions you held on December 31, 2017, about how many patients did you see in a typical week? If none, enter zero.</p> <p><input type="text"/> Patients</p> <p>F11. Were you providing patient care as an NP in 2013?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Question F13</p> <p>F12. Did your overall patient population size increase, decrease, or stay the same since 2013?</p> <p><input type="checkbox"/> Increased</p> <p><input type="checkbox"/> Decreased</p> <p><input type="checkbox"/> Stayed the same</p> <p><input type="checkbox"/> Don't know</p> <p>F13. Across all NP positions you held on December 31, 2017, did you have a panel of patients that you managed, where you were the primary provider? A panel is a group of patients that you see across a period of time.</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Question F19</p> <p>F14. Across all of your NP positions, on average, about how many patients were on your panel?</p> <p><input type="text"/> Patients</p> <p>F15. What percentage of your panel were patients from racial/ethnic minority groups?</p> <p><input type="text"/> %</p> <p>F16. What percentage of your panel were patients with limited English proficiency?</p> <p><input type="text"/> %</p>	<p>F17. Please estimate the percentage of your patient panel that was covered by the following types of insurance. Do not use decimals.</p> <p>Private Insurance <input type="text"/> %</p> <p>Medicare, for people 65 and older, or people with certain disabilities <input type="text"/> %</p> <p>Medicaid, Medical Assistance, or any kind of government assistance plan for those with low incomes or a disability <input type="text"/> %</p> <p>TICARE or other military health care <input type="text"/> %</p> <p>VA <input type="text"/> %</p> <p>Indian Health Service <input type="text"/> %</p> <p>Self-pay/uninsured <input type="text"/> %</p> <p>Other <input type="text"/> %</p> <p>Total = 100%</p> <p><input type="checkbox"/> Don't know</p> <p>F18. How were medical expenses reimbursed for the majority of your panel of patients? Mark one box only.</p> <p><input type="checkbox"/> Fee-for-service (e.g., PPO and Original Medicare)</p> <p><input type="checkbox"/> Capitated fees per patient (e.g., HMO)</p> <p><input type="checkbox"/> Other</p> <p><input type="checkbox"/> Don't know</p> <p>F19. Did you have hospital admitting privileges on December 31, 2017?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>F20. Were you covered by malpractice insurance on December 31, 2017?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Question F22 on page 16</p>
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<p>F21. Who paid for your malpractice insurance?</p> <p><input type="checkbox"/> Self</p> <p><input type="checkbox"/> Employer</p> <p><input type="checkbox"/> Both</p> <p>F22. Did you have prescriptive authority?</p> <p><input type="checkbox"/> Yes → SKIP to Question F24</p> <p><input type="checkbox"/> No</p> <p>F23. Why didn't you have prescriptive authority? Mark all that apply.</p> <p><input type="checkbox"/> Was in the process of applying</p> <p><input type="checkbox"/> MD or other NP wrote all of my prescriptions</p> <p><input type="checkbox"/> State scope of practice regulations</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p> <p>F24. On December 31, 2017 did you have a personal Drug Enforcement Administration (DEA) number?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>F25. In any of your NP positions, did you have the title Hospitalist?</p> <p><input type="checkbox"/> Yes → SKIP to Section H on page 17</p> <p><input type="checkbox"/> No → SKIP to Section H on page 17</p>	<p>F26. What are the reasons that you were NOT working as an NP on December 31, 2017? Mark all that apply.</p> <p><input type="checkbox"/> Overall lack of NP job opportunities</p> <p><input type="checkbox"/> Lack of NP job opportunities in desired location</p> <p><input type="checkbox"/> Lack of NP job opportunities in desired specialty</p> <p><input type="checkbox"/> Lack of NP job opportunities in desired type of facility</p> <p><input type="checkbox"/> Limited scope of practice for NPs in the state where practice was desired</p> <p><input type="checkbox"/> Lack of experience or qualification</p> <p><input type="checkbox"/> Inadequate salary/benefits</p> <p><input type="checkbox"/> Working outside the field of nursing</p> <p><input type="checkbox"/> Family caregiving</p> <p><input type="checkbox"/> Disability/illness</p> <p><input type="checkbox"/> Chose not to work</p> <p><input type="checkbox"/> Retirement</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p> <p>Continue on next page</p>
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Attachment A: Paper version of the NSSRN containing questions used in usability testing of the online NSSRN

<div><h3>Section G. Nurses Not Working in Nursing</h3><p><i>If you were working for pay in nursing on December 31, 2017, please SKIP to Section H.</i></p><p>G1. What are your intentions regarding paid work in nursing? Mark one box only.</p><p><input type="checkbox"/> Actively looking for work in nursing</p><p><input type="checkbox"/> Plan to return to nursing in the future, not looking for work now → SKIP to Question G4</p><p><input type="checkbox"/> No future intention to work for pay in nursing → SKIP to Question G5a</p><p><input type="checkbox"/> Undecided at this time → SKIP to Question G5a</p><p><input type="checkbox"/> Have returned to nursing since December 31, 2017 → SKIP to Section H</p><p>G2. How long have you been actively looking for paid work in nursing? Enter zero if less than one month.</p><p><input type="text"/> Month(s)</p><p>G3. Are you looking for a position that is full-time or part-time?</p><p><input type="checkbox"/> Full-time → SKIP to Question G5a</p><p><input type="checkbox"/> Part-time → SKIP to Question G5a</p><p><input type="checkbox"/> Either → SKIP to Question G5a</p><p>G4. When do you plan to return to paid work in nursing? Enter zero if less than one year.</p><p><input type="text"/> Year(s)</p><p>G5a. Have you ever been employed or self-employed in nursing?</p><p><input type="checkbox"/> Yes</p><p><input type="checkbox"/> No → SKIP to Question G6</p><p>G5b. How long has it been since you were last employed or self-employed as a nurse? Enter zero if less than one year.</p><p><input type="text"/> Year(s)</p></div> <div><p>G6. What are the primary reasons you were not working in a nursing position for pay on December 31, 2017? Mark all that apply.</p><p><input type="checkbox"/> Burnout</p><p><input type="checkbox"/> Career change</p><p><input type="checkbox"/> Difficulty finding a nursing position</p><p><input type="checkbox"/> Disability/illness</p><p><input type="checkbox"/> Family caregiving</p><p><input type="checkbox"/> Inability to practice nursing on a professional level</p><p><input type="checkbox"/> Inability to practice to the full extent of my license</p><p><input type="checkbox"/> Inadequate staffing</p><p><input type="checkbox"/> Lack of advancement opportunities</p><p><input type="checkbox"/> Lack of collaboration/communication between health care professionals</p><p><input type="checkbox"/> Lack of good management or leadership</p><p><input type="checkbox"/> Liability concerns</p><p><input type="checkbox"/> Physical demands of job</p><p><input type="checkbox"/> Retirement</p><p><input type="checkbox"/> Salaries too low/better pay elsewhere</p><p><input type="checkbox"/> Scheduling/inconvenient hours/too many hours/too few hours</p><p><input type="checkbox"/> School/educational program</p><p><input type="checkbox"/> Skills are out-of-date</p><p><input type="checkbox"/> Stressful work environment</p><p><input type="checkbox"/> Other, Specify: <input type="text"/></p><p>Continue to Section H</p><h3>Section H. Prior Nursing Employment</h3><p>H1. Since receiving your first U.S. RN license, how many years have you worked in nursing? Count only the years in which you worked at least 6 months. Enter zero if less than one year.</p><p><input type="text"/> Year(s)</p></div>	<div><p>H2. Have you left work in nursing for one or more years since becoming an RN?</p><p><input type="checkbox"/> Yes → For how many years? <input type="text"/></p><p><input type="checkbox"/> No</p><p>H3. Next, we are going to ask about your employment approximately one year ago. Were you employed in nursing on December 31, 2016?</p><p><input type="checkbox"/> Yes</p><p><input type="checkbox"/> No → SKIP to Section I on page 20</p><p>H4. For the principal nursing position you held on December 31, 2016, did you work full-time or part-time? Mark one box only.</p><p><input type="checkbox"/> Full-time (including full-time for an academic year)</p><p><input type="checkbox"/> Part-time (including working only part of the calendar or academic year)</p><p>H5. How would you describe the principal nursing position you held on December 31, 2016?</p><p><input type="checkbox"/> Same position and same employer as principal nursing position on December 31, 2017 → SKIP to Section I on page 20</p><p><input type="checkbox"/> Different position but same employer as principal nursing position held on December 31, 2017</p><p><input type="checkbox"/> Different employer than principal nursing position held on December 31, 2017</p><p>H6. What was the location of the principal nursing position you held on December 31, 2016? If you were not employed in a fixed location, enter the location that best reflects where you practiced.</p><p>City/Town: <input type="text"/></p><p>County: <input type="text"/></p><p>State (or country if not U.S.A.): <input type="text"/></p><p>Zip: <input type="text"/></p><p>H7. What were the primary reason(s) for your employment change? Mark all that apply.</p><p><input type="checkbox"/> Better pay/benefits</p><p><input type="checkbox"/> Burnout</p><p><input type="checkbox"/> Career advancement/promotion</p><p><input type="checkbox"/> Career change</p><p><input type="checkbox"/> Change in child's school</p><p><input type="checkbox"/> Disability/illness</p><p><input type="checkbox"/> Family caregiving</p><p><input type="checkbox"/> Inability to practice to the full extent of my license</p><p><input type="checkbox"/> Inadequate staffing</p><p><input type="checkbox"/> Interpersonal differences with colleagues or supervisors</p><p><input type="checkbox"/> Lack of advancement opportunities</p><p><input type="checkbox"/> Lack of collaboration/communication between health care professionals</p><p><input type="checkbox"/> Lack of good management or leadership</p><p><input type="checkbox"/> Length of commute</p><p><input type="checkbox"/> Patient population</p><p><input type="checkbox"/> Physical demands of job</p><p><input type="checkbox"/> Relocation to different geographic area</p><p><input type="checkbox"/> Retirement</p><p><input type="checkbox"/> Scheduling/inconvenient hours/too many hours/too few hours</p><p><input type="checkbox"/> School/educational program</p><p><input type="checkbox"/> Sign-on bonus offered</p><p><input type="checkbox"/> Spouse's employment opportunities</p><p><input type="checkbox"/> Stressful work environment</p><p><input type="checkbox"/> Other, Specify: <input type="text"/></p></div>
<div><p>H8. Which one of the following best describes the employment setting of the principal nursing position you held on December 31, 2016? Mark one box only.</p><p>Hospital (not mental health)</p><p><input type="checkbox"/> Critical Access Hospital</p><p><input type="checkbox"/> Inpatient unit, not Critical Access Hospital</p><p><input type="checkbox"/> Emergency Department, not Critical Access Hospital</p><p><input type="checkbox"/> Hospital sponsored ambulatory care (outpatient, surgery, clinic, urgent care, etc.)</p><p><input type="checkbox"/> Hospital ancillary unit</p><p><input type="checkbox"/> Hospital nursing home unit</p><p><input type="checkbox"/> Hospital administration</p><p><input type="checkbox"/> Hospital other, Specify: <input type="text"/></p><p>Other inpatient setting</p><p><input type="checkbox"/> Nursing home unit NOT in hospital</p><p><input type="checkbox"/> Rehabilitation facility/long-term care</p><p><input type="checkbox"/> Inpatient mental health/substance abuse</p><p><input type="checkbox"/> Correctional facility</p><p><input type="checkbox"/> Inpatient hospice</p><p><input type="checkbox"/> Other inpatient setting, Specify: <input type="text"/></p><p>Clinic/Ambulatory</p><p><input type="checkbox"/> Nurse managed health center</p><p><input type="checkbox"/> Private medical practice (clinic, physician office, etc.)</p><p><input type="checkbox"/> Public clinic (Rural Health Center, FQHC, Indian Health Service, Tribal Clinic, etc.)</p><p><input type="checkbox"/> School health service (K-12 or college)</p><p><input type="checkbox"/> Outpatient mental health/substance abuse</p><p><input type="checkbox"/> Urgent care (not hospital based)</p><p><input type="checkbox"/> Ambulatory surgery center (free standing)</p><p><input type="checkbox"/> Other, Specify: <input type="text"/></p><p>Other types of settings</p><p><input type="checkbox"/> Home health agency/service</p><p><input type="checkbox"/> Occupational health or employee health service</p><p><input type="checkbox"/> Public health or community health agency (not a clinic)</p><p><input type="checkbox"/> Government agency other than public/community health or correctional facility</p><p><input type="checkbox"/> Outpatient dialysis center</p><p><input type="checkbox"/> University or college academic department</p><p><input type="checkbox"/> Insurance company</p><p><input type="checkbox"/> Call center/telemedicine center</p><p><input type="checkbox"/> Other, Specify: <input type="text"/></p><p>Continue on next page</p></div>	<div><h3>Section I. National Practitioner Data Bank</h3><p>I1. The National Practitioner Data Bank (NPDB), which includes the Healthcare Integrity and Protection Data Bank (HIPDB), is a nationwide repository of negative actions taken against healthcare professionals. Its primary function is to aid employers in making well informed hiring decisions. Currently, certain entities are required to query the NPDB on physicians and dentists, prior to making decisions on hiring and clinical privileges. Do you think the query requirement should be expanded to other healthcare professionals?</p><p><input type="checkbox"/> Yes, it should be expanded to all healthcare professionals</p><p><input type="checkbox"/> Yes, it should be expanded to some but not all healthcare professions</p><p><input type="checkbox"/> No, it should not be expanded</p><p>I2. Have you been reported to the NPDB or the HIPDB?</p><p><input type="checkbox"/> Yes</p><p><input type="checkbox"/> No → SKIP to Question I5</p><p>I3. Who submitted the report(s)? Mark all that apply.</p><p><input type="checkbox"/> State licensing board</p><p><input type="checkbox"/> Medical malpractice payer, such as an insurance company</p><p><input type="checkbox"/> Hospital</p><p><input type="checkbox"/> Federal agency</p><p><input type="checkbox"/> Unknown</p><p><input type="checkbox"/> Other, Specify: <input type="text"/></p><p>I4. Did the NPDB report impact your career? Mark all that apply.</p><p><input type="checkbox"/> Yes, the report had a negative impact on my position (e.g., reprimand, termination)</p><p><input type="checkbox"/> Yes, the report made it difficult to obtain employment</p><p><input type="checkbox"/> No, the report did not impact my career</p><p>I5. When making hiring decisions, do you feel that healthcare employers should consider prior negative healthcare related actions taken against prospective employees?</p><p><input type="checkbox"/> Yes, they should consider prior negative actions</p><p><input type="checkbox"/> No, they should not consider prior negative actions</p><p>I6. The NPDB collects reports on adverse actions taken against a physician that affect that physician's clinical privileges. Many nurse practitioners currently perform job functions similar to primary care physicians. Do you feel the NPDB should also collect reports on adverse actions against a nurse practitioner that could affect their clinical privileges?</p><p><input type="checkbox"/> Yes, they should be reported</p><p><input type="checkbox"/> No, they should not be reported</p><p>I7. Do you think nurse practitioners who are supervised by a physician should be subject to the same reporting requirements as physicians, less strict reporting requirements, or more strict reporting requirements?</p><p><input type="checkbox"/> The same reporting requirements as physicians</p><p><input type="checkbox"/> Less strict reporting requirements for nurse practitioners who are supervised by a physician</p><p><input type="checkbox"/> More strict reporting requirements for nurse practitioners who are supervised by a physician</p><p>Continue on next page</p></div>

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<div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc; margin-bottom: 10px;"> <p align="center">Section J. General Information</p> </div> <p>J1. Where did you reside on December 31, 2017? This information is critical for producing state/county estimates of the nursing workforce.</p> <p>City/Town <input style="width: 100%;" type="text"/></p> <p>County <input style="width: 100%;" type="text"/></p> <p>State (or country if not U.S.A.) <input style="width: 100%;" type="text"/></p> <p>Zip <input style="width: 100%;" type="text"/></p> <p>J2. Where did you reside on December 31, 2018? This information is critical for producing state/county estimates.</p> <p><input type="checkbox"/> Same address reported in Question J1</p> <p>City/Town <input style="width: 100%;" type="text"/></p> <p>County <input style="width: 100%;" type="text"/></p> <p>State (or country if not U.S.A.) <input style="width: 100%;" type="text"/></p> <p>Zip <input style="width: 100%;" type="text"/></p> <p>J3. What is your sex?</p> <p><input type="checkbox"/> Male</p> <p><input type="checkbox"/> Female</p> <p>J4. What is the year of your birth?</p> <p><input style="width: 100%;" type="text"/></p> <p>J5. Are you of Hispanic, Latino or Spanish origin?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>J6. What is your race? Mark all that apply.</p> <p><input type="checkbox"/> White</p> <p><input type="checkbox"/> Black or African American</p> <p><input type="checkbox"/> Asian</p> <p><input type="checkbox"/> American Indian or Alaska Native</p> <p><input type="checkbox"/> Native Hawaiian or Other Pacific Islander</p> <p><input type="checkbox"/> Some other race</p> <p>J7. What languages do you speak fluently, other than English? Mark all that apply.</p> <p><input type="checkbox"/> No other languages</p> <p><input type="checkbox"/> Spanish</p> <p><input type="checkbox"/> Filipino language (Tagalog, other Filipino dialect)</p> <p><input type="checkbox"/> Chinese language (Cantonese, Mandarin, other Chinese language)</p> <p><input type="checkbox"/> Russian</p> <p><input type="checkbox"/> Korean</p> <p><input type="checkbox"/> Vietnamese</p> <p><input type="checkbox"/> American Sign Language</p> <p><input type="checkbox"/> Other language(s)</p> <p>J8. What is your marital status?</p> <p><input type="checkbox"/> Married or in domestic partnership</p> <p><input type="checkbox"/> Widowed, divorced, separated</p> <p><input type="checkbox"/> Never married</p> <p align="center">Continue on next page</p>	<div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc; margin-bottom: 10px;"> <p align="center">Section K. License and Certification Detail</p> </div> <p>J9. Have you ever served on active duty in the U.S. Armed Forces, Reserves, or National Guard? Mark one box only.</p> <p><input type="checkbox"/> Never served in the military</p> <p><input type="checkbox"/> Only on active duty for training in the Reserves or National Guard</p> <p><input type="checkbox"/> Now on active duty</p> <p><input type="checkbox"/> On active duty in the past, but not now</p> <p>J10. Which of the following best describes the children/parents/dependents who either live at home with you or for whom you provide a significant amount of care? Mark all that apply.</p> <p><input type="checkbox"/> Children less than 6 years old at home</p> <p><input type="checkbox"/> Children 6 to 18 years old at home</p> <p><input type="checkbox"/> Other adults at home (e.g., parents or dependents)</p> <p><input type="checkbox"/> Others living elsewhere (e.g., children, parents or dependents)</p> <p><input type="checkbox"/> None</p> <p>J11. Including employment earnings, investment earnings, and other income of all household members, what was your 2017, pre-tax annual total household income? Mark one box only.</p> <p><input type="checkbox"/> \$25,000 or less</p> <p><input type="checkbox"/> \$25,001 to \$35,000</p> <p><input type="checkbox"/> \$35,001 to \$50,000</p> <p><input type="checkbox"/> \$50,001 to \$75,000</p> <p><input type="checkbox"/> \$75,001 to \$100,000</p> <p><input type="checkbox"/> \$100,001 to \$150,000</p> <p><input type="checkbox"/> \$150,001 to \$200,000</p> <p><input type="checkbox"/> More than \$200,000</p> <p>K1. Please provide any other names under which you may have held a nursing license. If none, leave blank.</p> <p>First name <input style="width: 100%;" type="text"/> M.I. <input style="width: 100%;" type="text"/></p> <p>Last name <input style="width: 100%;" type="text"/></p> <p>First name <input style="width: 100%;" type="text"/> M.I. <input style="width: 100%;" type="text"/></p> <p>Last name <input style="width: 100%;" type="text"/></p> <p>K2. On December 31, 2017, which of the following skill-based certifications did you have? Mark all that apply.</p> <p><input type="checkbox"/> No skill-based certifications</p> <p><input type="checkbox"/> Ambulatory Care Certification</p> <p><input type="checkbox"/> Critical Care Certificate</p> <p><input type="checkbox"/> Emergency Medicine/Nursing (EMT, ENPC, etc.)</p> <p><input type="checkbox"/> Life Support (BLS, ACLS, BCLS, etc.)</p> <p><input type="checkbox"/> Resuscitation (CPR, NRP, etc.)</p> <p><input type="checkbox"/> Trauma Nursing (TNCC, ATCN, ATN, etc.)</p> <p><input type="checkbox"/> Other, Specify: <input style="width: 100%;" type="text"/></p> <p>K3. On December 31, 2017, did you have any active national nursing certifications as a Clinical Nurse Specialist, Nurse-Midwife, or Nurse Anesthetist?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Section L on page 23</p>
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<p>K4a. On December 31, 2017, did you have an active certification as a <u>Clinical Nurse Specialist (CNS)</u>?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Question K5a on page 23</p> <p>K4b. Was this certification required by your employer for your job?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>K4c. Was this certification from a <u>national certifying organization</u>?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>K4d. Which of the following Clinical Nurse Specialist (CNS) certifications did you have? Mark all that apply.</p> <p><input type="checkbox"/> Acute Care/Critical Care</p> <p><input type="checkbox"/> Adult Health</p> <p><input type="checkbox"/> Community Health/Public Health</p> <p><input type="checkbox"/> Diabetes Management</p> <p><input type="checkbox"/> Gerontological</p> <p><input type="checkbox"/> Home Health</p> <p><input type="checkbox"/> Hospice and Palliative Care</p> <p><input type="checkbox"/> Medical-Surgical</p> <p><input type="checkbox"/> Oncology</p> <p><input type="checkbox"/> Pediatric</p> <p><input type="checkbox"/> Psychiatric & Mental Health - Adult</p> <p><input type="checkbox"/> Psychiatric & Mental Health - Child/Adolescent</p> <p><input type="checkbox"/> Psychiatric & Mental Health - Family</p> <p><input type="checkbox"/> Other, Specify: <input style="width: 100%;" type="text"/></p> <p>K5a. On December 31, 2017, did you have an active certification as a <u>Nurse-Midwife</u>?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Question K5b</p> <p>K5b. Was this certification required by your employer for your job?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>K5c. Was this certification from a <u>national certifying organization</u>?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>K5d. On December 31, 2017, did you have an active certification as a <u>Nurse Anesthetist</u>?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → SKIP to Section L</p> <p>K5e. Was this certification required by your employer for your job?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>K5f. Was this certification from a <u>national certifying organization</u>?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc; margin-top: 10px;"> <p align="center">Section L. Contact Information</p> </div> <p>L1. Please provide your e-mail address and telephone number. This information will only be used in the event that we need to contact you about any of your responses.</p> <p>E-mail address: <input style="width: 100%;" type="text"/></p> <p>Telephone number: (Mark one box only)</p> <p>Area Code + Number <input style="width: 100%;" type="text"/></p> <p><input type="checkbox"/> Home <input type="checkbox"/> Work <input type="checkbox"/> Cell</p>	<p>Use the space below to correct any errors in your name/address information.</p> <p>Corrections to First Name <input style="width: 100%;" type="text"/> Corrections to M.I. <input style="width: 100%;" type="text"/> Corrections to Last Name <input style="width: 100%;" type="text"/></p> <p>Corrections to Number and Street <input style="width: 100%;" type="text"/></p> <p>Corrections to City/Town <input style="width: 100%;" type="text"/> Corrections to State <input style="width: 100%;" type="text"/> Corrections to Zip Code <input style="width: 100%;" type="text"/></p> <p align="center">Thank you for your participation.</p> <p align="center"><i>Please return this survey and any duplicate surveys in the enclosed, postage-paid envelope.</i></p> <p><small>The U.S. Census Bureau is conducting the National Sample Survey of Registered Nurses on the behalf of the U.S. Department of Health and Human Services (HHS) under Title 13, United States Code, Section 224, which allows the Census Bureau to conduct surveys on behalf of other agencies. Public Service Act 42 U.S.C. Section 2906b(2)(A) and Title 42 U.S.C. Section 2906a(4) allows HHS to collect information for the purpose of understanding the nursing workforce in the United States. Federal law protects your privacy and keeps your answers confidential under 13 U.S.C. Section 9. All access to Title 13 data from this survey is restricted to Census Bureau employees and those holding Census Bureau Special Source Status pursuant to 13 U.S.C. Section 231e.</small></p> <p><small>Any information you provide will be shared among a limited number of Census Bureau and HHS staff only for work-related purposes identified above and as permitted under the Privacy Act of 1974 (5 U.S.C. Section 552a).</small></p> <p><small>Participation in this survey is voluntary and there are no penalties for refusing to answer questions. However, your cooperation in obtaining this much needed information is extremely important in order to ensure complete and accurate results.</small></p>
23 27028026	24 27028018

Attachment B: Quick Report: Including Usability and Accessibility Testing Results

National Sample Survey of Registered Nurses Usability Testing Results

Elizabeth Nichols and Kathleen Kephart
Center for Survey Measurement
U.S. Census Bureau
December 14, 2017



1

Goals of testing

- Determine usability problems with NSSRN
 - Both PC design and mobile design
- Focus on working Registered Nurses and Nurse Practitioner paths in the instrument
- Secondary goal: Identify any cognitive issues with new questions (and existing questions if identified during the session)



2

Methodology

- In-person qualitative sessions with researcher and currently licensed registered nurse (R) who was working as a nurse either full or part-time as of December 2016
- Audio and video record R's device during session; eye-tracking on laptop
- Demographic questionnaire
- Researcher provides invitation letter, R complete NSSRN on their mobile phone, tablet, or Census Bureau-provided laptop
 - Vignettes to logout, log back in
- R answers satisfaction questions
- Retrospective debriefing



3

Recruiting

- BOC broadcast on 10/18
- Craigslist ad
- Personal contacts
- Email contact to the local chapters of the American Association of Nurse Practitioners: NPAM and VCNP on 11/28



4

RN Participant Info and devices

Registered Nurses	Device
P1: Advanced practice nurse – certification for nurse midwife	iPhone 7 (afari)
P2: Recent graduate in a hospital; this is his 2nd degree	Android "s plus 3" Google chrome
P3: 20+ years experience in a hospital (has 2 jobs there)	Census provided laptop
P4: Recent grad and was nursing assistant prior to current job	Census provided laptop
P5: Hospital nurse from TX, also had another degree prior to nursing degree	iPhone X
P6: School nurse with Associates degree, has 2nd job in hospital	Census provided laptop
P7: A full-time nurse in a hospice inpatient facility, originally got her Associates, then went back and got her Bachelors	Census provided laptop
P8: A full-time night nurse in a major hospital. Received several degrees through Army	iPad Pro "9.5 inches – free field



5

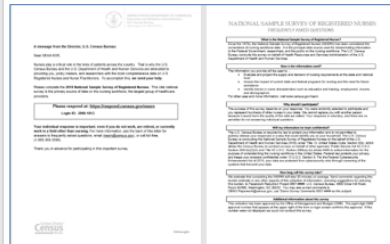
NP Participant Info and Devices

Nurse Practitioner	Device
P9: NP in a Chiropractic practice. Went to school where got undergrad in 5 years then right into an RN/NP masters program.	Census provided laptop
P10: A NP who works in the hospital, specializing in cardiac. She also has a second moonlighting job at an urgent care center where she works maybe 1 day a month to make some extra money. She was in a hurry during the session.	Census provided laptop
P11: A NP who has had a varied work path and changed jobs frequently. During college she volunteered as an EMT. She initially received an undergrad degree in nursing and got her RN, she then worked in a hospital and such, and then went back to school to become an NP. She then worked in a medical clinic, in a hospital and most recently in a school. She currently is working for a large group doing patient care coordination. She is in training now. The survey did not capture this fluid employment path well.	Census provided laptop
P12: NP for a chain of convenience clinics all over the greater DC area (at the time of the data in the survey, she had been laid off and was in a different job by 2017). She had done a BS in Psychology before becoming an RN, she worked as an RN for 3.5 years in a hospital and free clinic. As with P11 the survey did not do a good job capturing this dynamic career path.	Census provided laptop
P13: NP with 20+ years of experience, 2 masters works in large hospital.	Samsung S5 – Free field
P14: NP with varied experience, currently left her private practice because of relocation for family reasons.	iPad mini air 8" Free field
P15: NP with varied experience, and from a more rural state, she knew what critical access hospital was, she also did convenience care.	iPhone 6s (bible Stand)



6

Letter and URL



- Letter seemed satisfactory
- Make sure URL is searchable on google (2 Rs tried to find it that way)
 - Several typed the URL incorrectly initially;
 - Some tried to sign in on the OMB page for the NSSRN



7

Outline

- IT Issues
- Usability Issues
- UX Expert Review
- Future Work
- Cognitive Issues



8

IT Issues

9

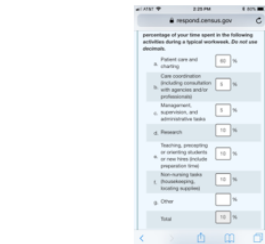
IT Issues- B15 (High priority)



10

- Edit message always appears even if the sum is 100%.
 - On 2nd selection of "Next", the survey moves on, but every respondent struggled with this question.
 - Some Rs assume they have to enter 0s in the fields that do not apply to them.
 - Critical to correct as one R ended up changing her answer to an incorrect amount to try and get out of the question.
 - Also could lead to break offs.
- Recommendation: Correct edit so that it does not appear if you have entered data that equals 100%.

IT issues - B15 (High priority)



11

- iPhone or iPad the total shows as 10% (when it is 100%); However, Android and laptop show as 100%.
- Recommendation: Make sure the total correctly appears as 100% across Apple and PC devices.

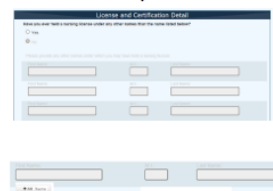
IT issues – B15 (Medium priority)



12

- The hover says "hours" and one R initially put hours in, then realized we wanted percents.
- Recommendation: Change the hover to Percents instead of Hours.

IT/UX issue: H2 (High priority)



13

- The "No" box is disabled.
- There are a lot of name fields and almost every R commented on how many names you could have.
- The question text refers to a name that doesn't exist in the boxes.
- Recommendation:
 - Fix "No" radio button.
 - Revise question to "Have you ever held a nursing license under any other name?"
 - Offer space for only one additional name.
 - Add an "Add Name" button with an "Add Name" label as mocked up on the bottom left figure. If the button is selected, another name field appears. You might also want to add a red x to the right of the names to remove a name (not shown).

IT mobile optimization issues – A5 & B17c (Low priority)



14

- UX/IT mobile optimization issue: The screen shift right when focus is on the state field and then user had to swipe left after selecting a state. Likewise for the other write in fields. This might affect more than just these 2 questions.



IT Skip Issue (High priority)

- There is a skip sequence error if Rs answer K3 as a "Yes". Two respondents selected "Yes" and never received Q L1 (Email and phone contact info).

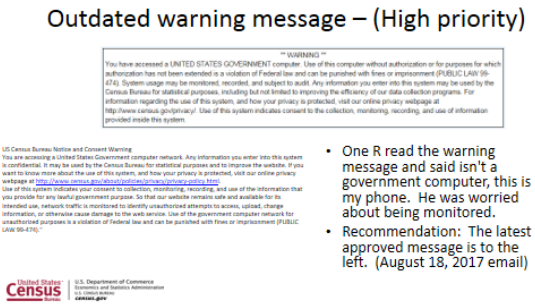
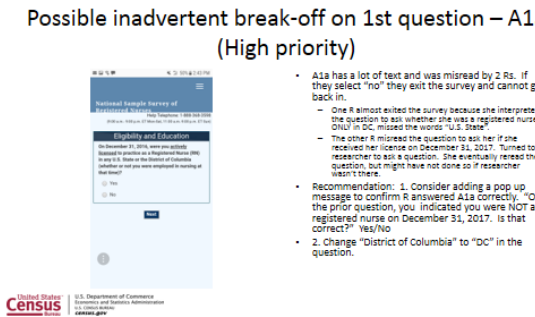
15

Typos (High priority)

- Privacy act has a space between the letters for or. It looks like "o r"
- Banner for Section F: "Practitioners" is spelled incorrectly
- B14c: "Following" is spelled incorrectly
- B15e: Make sure "include preparation" is separated.
- K3: Nurse-midwife has a dash on internet not paper.
- The re-review section keeps the older year numbers even though we changed it to 2016 in the main survey (it looks like they hard coded those years – so beware if we reuse this survey after 2018)

16

Attachment B: Quick Report: Including Usability and Accessibility Testing Results

<div><h3>Outdated warning message – (High priority)</h3><p>17</p></div>	<div><h3>Usability Issues</h3></div>
<div><h3>Possible inadvertent break-off on 1st question – A1a (High priority)</h3><p>19</p></div>	<div><h3>Labeling and response option issues – B14 (High priority)</h3><p>20</p></div>
<div><h3>UX design issue: B13 and H8 (Medium priority)</h3><p>21</p></div>	<div><h3>UX – B13 Example of Recommendations</h3><p>22</p></div>
<div><h3>Re-review screen – (Medium priority)</h3><p>23</p></div>	<div><h3>Autotab needed for Login ID (Medium priority)</h3><p>24</p></div>

Attachment B: Quick Report: Including Usability and Accessibility Testing Results

DOB year starts with 1891 – (Medium priority)

- Many Rs commented on the backward years offered for date of birth and the fact that it starts with a ridiculous number of 1891
- Recommendation: Start with the most recent “logical year” and then work backwards to a “logical end”, not 1891.

25

Match the write in space size to the number of characters allowed. Many Qs (Medium priority)

- The picture shows the maximum number of characters allowed. Two Rs ran out of room at the write-ins because the space suggests they can write more.
- Recommendation: Either shrink the space or allow them to type more (it is doubtful that people will type in all caps, but you can look at prior data to see what they do). Add a character countdown feature to show them how much space is left.

26

Salary amount formats: B26 & E5 – (Medium priority)

- Several Rs tried to enter commas when they entered their salary, several Rs also commented that they had to count the zeros so “they didn’t seem too rich”
- Recommendation: Use input format with embedded commas and right justify amounts. The National Survey of College Graduates adopted this design.

27

Disabled and enabled text for skips – A12a Positive UX design

- One R initially marked “No” but then read the shaded text for the sub-questions and realized she should include her online course work to become an NP.
- Other Rs also noted, “oh, this is not for me”, etc. when shown the disabled text.
- It is important that all the text, response questions, etc. are consistently disabled. Otherwise the respondent tries to click on the link. The next 3 slides identify areas where we need more standardization of the disabled text.

28

Usability Issue: Consistency in Disabling Text (Medium priority)

- In this example, country response field is actually disabled, but the question is not. For here and any other country response, we need to disable the question as well.
- Rs tried to select country and it was a frustrating experience.
- See the next slide for some suggestions.

29

UX issue – country data collection (Medium priority)

- A10b: country label did not grey out after selected a state. It looked like she had to select it, but it was not functional when she tried.
- B2: country has to be selected even after state is entered. U.S. is also buried in country list alphabetically.
- E4, J1: Country label is not disabled once you select state. However, J1 has an instruction next to the label (if not USA) which seemed to help (see figure)
- (there might be other country fields within the survey besides these)
- All Rs had difficulty with this design across the survey because of the inconsistency.

- Recommendation:
- 1. Auto-populate the country with U.S. if state is selected. OR
- 2. Grey out the country label and the field if state is selected.
- 3. Add to the label (if not USA) on all country lists.
- 4. Put U.S. at the top of the list as that is where Rs look for it.

30

Disable/enable design needs to be consistent – H2 and A5 (Low priority)

- H2 (top figure) – the entire 2nd question should be disabled until they select yes. Rs paused and read and then figured out it did not apply to them.
- A5 (bottom) Consider a different design that is more in line with the H2 example. Of course, you need to enable and disable the correct fields and labels, unlike the mock up.
- Why should you consider redesigning this screen? One R did not select the radio button for U.S. but just selected the state. ACS used this design and had similar problems.

31

Telephone # - L1 – (Low priority)

- One R fiddled with phone number trying to enter spaces. Currently, it enters as straight numbers.
- Recommendation: Use a standard format for entering phone numbers, like USPS Hold mail website (bottom 2 figures – the first one is without the focus on the field and then when you put the focus in the field, the dashes appear automatically). The other alternative is to use 3 fields like decennial with an autotab between the fields (not shown)

32

Pop up windows – FAQs etc. – (Low priority)

- **FAQs:** When asked to log out and save the respondent went to the upper right hamburger menu with no issue and selected FAQs for help which were missing. She used the instructions which are fine although there is no close button on either one to get back to the main page. She could navigate by using the browser windows on her phone. Might consider using close window in window.

33

UX Expert Review Comments

34

Medium priority

- Some drop downs use the states spelled out and some use abbreviations. While we think all months are spelled out, it is preferred to do that compared to an abbreviation or numbers.
- **Recommendation:** Be consistent and for 508 compliance and plain language reasons spell out states and months in dropdowns.

35

Low priority

- Change all paper form instructions that start with "Mark" to either "Select one" or "Select all that apply."
- D7: the "Other" choice is not lined up with the response option.
- (Respondents did not comment on any of these issues).

36

Welcome – expert review –(Low priority)



- There is a lot of text and no one appeared to read anything but the Welcome word and then try to find the Login fields.
- On mobile, you must scroll to see the login fields, and when you are scrolling, you must scroll twice, once to get to login, and then you select sign in, and then you must scroll again to find the PIN. The 11 who did this was someone surprised and panicked before she scrolled the 2nd time as when you resume, it is not clear you will need your PIN.
- The telephone number information is duplicated. Two 11s pointed that out.
- Most 11s missed the time out information, which is below the button for sign in.
- **Recommendation:** See below for a draft mock up. Redesign this screen with the title banner and then the black grid on white that says Welcome to the 2016 National Sample Survey. Move the "login" part up. Move the break information to the 11th bullet (don't bold). Change the word "log in" to "login" within the first 2 bullets to match the labels. Place all the other information below this or use the next recommendation.
- **Recommendation 2:** For the phone and email information, create a "Contact Us" link and put that in the bottom banner. Move the other information into FAQs. Make a FAQ link in the bottom as well as people did not necessarily see the information in the top banner. Many people did not log out during the vignette.

37

Consider a keypad for numeric entries (Low priority)



- We've recommended using a keypad for numeric data entry on mobile.
- This speeds up the process for the respondent because they do not have to switch keyboards and it also quickly communicates what type of answer we want.
- NSCG, the ACS, and the 2016 Census Test have adopted the keypad design.
- Recommended questions: Login ID, telephone number, salary (B26, E5), number of years worked (H1), number of hours worked (B14), months per year (B12), % questions (B15, B17b, F14-F17), all ZIPs

38

Navigation – (Low priority)

- One R used back browser button a lot instead of previous button – while others used previous button
- Re-review navigation works well.
- Exit and resume vignette: Logout button was not found by several R. Many R said they wanted a button that said Save and return later at the bottom of the screen. Several R said they found the logout and there was no problem logging out and resuming.
- **Recommendation:** Consider adding that option to the bottom of the screen. Low priority.
- Expert review: While no one had difficulty navigating, the navigation buttons are small, different sizes, and slightly too close together – see top figure. The 2016 Census Test navigation buttons look better. Consider using colors and buttons from the us design web standards page. <https://standards.usa.gov/>



39

Very Low priority

- **J1:** Completed city and ZIP, but left state blank. We are not sure why R did that, other than she had entered very similar information many times before.
 - Recommendation: If ZIP is entered, could we prefill state? Other websites do that; however, they might use street too.
- **B26:** R wanted a calculator on the salary screen.
 - Recommendation: It might be an interesting addition that could lead to some good research if paradata on the use of the calculator was collected.

40

Positive UX design

- L1 autopopulated with her correct email.
- Radio button spacing seems adequate for smartphones and tablets!
- Survey was actually quite consistent in the design and worked quite well compared to many of the other surveys we've tested.

41

Future Work

High priority

42

Future UX research Dropdown design for B18 and B19

- No problems with dropdown response option design. It worked on mobile too.
- Recommendation: You should compare responses against an item-by-item design for mobile or a grid on PC as this does take longer and there is also the spinner for iOS phones where it is more difficult to see response choices.

43

Question order might increase breakoffs

- Typically, demographic questions are asked either at the beginning of a survey or at the very end.
- In the NSSRN they are asked in the next to last major section – Section J.
- However, the section following the demographics, Section K asks about certifications and licenses. One R (on mobile) spontaneously commented that we “changed the pace” of the questionnaire when we started with the K question. He was expecting the survey to be winding down after the J questions, and because there is not a progress indicator and he did not know how much longer the questionnaire would go on, he indicated that he might break off at this point had he not been in the lab setting.
- Recommendation: Progress indicators have had mixed reviews for increasing breakoffs; therefore, we would only suggest one if you were able to do a split-panel experiment. Monitor break-offs by device at this point in the survey (and really at all points in the survey) through paradata. Consider reordering the survey so that Section J is at the end with Section L. Move Section K earlier with the A11 questions.

44

Duplicative questions might increase break-offs

- For NPs, the A10 series and the A11 series appear to collect nearly the same information.
- They are also asked again if they are an NP in F1a.
- For RN-only Rs, K3 and A11 are basically the same question. At least two Rs commented negatively on the duplicative questions.
- Recommendation: This would require a reworking of the questionnaire to eliminate the duplicative questions.

45

E4

- One NP that worked occasionally at urgent care backed out of Section E when she saw “weeks per year and average hours” and we “lost” her data.
- She said she works in a second job very rarely, like once per month. Since she could not indicate that, she backed out of the section and reported that she did not have a second job.
- Recommendation: Especially for online reporting, you could redesign this screen to ask how frequently the person works – as this is a second job. Weekly, monthly, or just occasionally, then go from there.

46

Cognitive Issues

47

“Compact Nursing License” – A1b

- Several Rs mentioned a “compact nursing license” when presented with A1b. This type of license allows nurses to practice in multiple states depending on the state awarding it. All Rs seemed to put the originating state, but it would be nice to allow them to acknowledge that they have a compact license.
- Recommendation: Add a check box to say that this license is a compact license. Do you really need the check box that they are licensed in more than 4 states. How often does that occur now that there are compact licenses?

48

Attachment B: Quick Report: Including Usability and Accessibility Testing Results

Possibly some measurement error - A8

Debrief

- One R mentioned Doula not listed - selected other health related job; (could not hear this clearly but thought said "NA" not listed - we aren't sure if this is NA - ultimately selected Nursing aide)
- Could be some error in nursing aide category: one R was a "graduated nurse", and selected (in error) "nursing aide".
- One R while in nursing school she was what is called a nurse extender, which was one or 2 days a week. She likened it to like a CNA, but she didn't have certification. R chose nursing aide.
- One R wondered if we wanted to make a distinction between non-licensed assistants and certified assistants for the first 2 choices.
- One R was a patient care assistant and he selected a "nursing aide".
- One R mentioned midwife seemed like a weird option that didn't fit with the other categories.

49

Self-financed – A9

- Self-finance did not imply that parents paid to several Rs.
 - Several Rs selected other resources to indicate that her parents paid her tuition bill.
- Recommendation: Review the NSCG list of funding sources for the appropriate label for the first category

50

Section B "Principal nursing position" versus "primary nursing position"

- One R said term "principal nursing position" was really weird and unusual. That she had never heard anyone say that, they talk about their "primary position is in unit X".

51

Text dense on mobile phone –B1 and B2

- One R commented on the wordy instruction between B1 and B2.
- Everyone seemed to read this instruction.
- Recommendation: Consider whether you can condense the instruction

52

Response choice missing for question about how long he/she looked for a job – B4

- 2 RNs actually never looked for the job, but they selected 1-6 months.

53

Cognitive issues: Preceptor and Orientations – Debrief B5 and B6

- There were no issues uncovered with the term preceptor or with a formal orientation program for either RNs and NPs.
- Hospitals had an orientation program and preceptors for RNs. However many private practices also had orientation programs.
- Mostly preceptors were defined as one person – a mentor, but some Rs described several preceptors.
- NPs did not always have a preceptor, and the orientation programs were less structured.
- The orientation programs for RNs seem to vary across states and have increased in length compared to years ago. Orientation programs are getting longer and Rs commented on this fact.
- One R mentioned that she wanted us to ask her about her preceptor and said there is a hazing culture with preceptors. This seems like an important finding, if it is prevalent, but we only heard one R mention it. She said it is pervasive.

54

Ordering of question options – A11

- One R said the order of choices was out of sync with how common the different specialties are. Recommended NP, Nurse Anesthetist, then nurse midwife, then clinical specialist last.

55

Team based care training in Principal Nursing Position section – B9

- It is not clear whether you want all training the person has ever received about team-based care, or just the training in their principal nursing position. All Rs selected all the training they have ever received, but some initially said they didn't get any, but then went on to select the formal schooling training they received.
- Recommendation: Consider moving this question to the education section.

56

Attachment B: Quick Report: Including Usability and Accessibility Testing Results

Ordering of question options – B10

- One R said the most common choice was the third option and it should be at the top. He also added that “per diem” is weird next to self-employed per diem means part time at different hospitals, not the same as “self-employed”.
- Several Rs struggled to find their response option and every R selected the third choice.



57

Critical Access Hospital – B13 Debrief



58

- Many Rs selected Critical Access Hospital in error. They should have selected the 2nd choice.
- 14/15 Rs did not know what Critical Access Hospital was. The one NP who did know what it meant, grew up in Kentucky and described it as a hospital in more rural areas. She seemed confident in her response.
- First three choices under hospital were confusing one R.
- The other terms used were Trauma 1, Trauma 2 or Trauma 3 hospital; Acute Care hospital, outpatient, and rehab

Cognitive issues and debriefing– B15 Debrief on category (c)



59

- Several Rs said this was a difficult question. Everyone but 2 understood what to do, however one put in hours and one went over 100% thinking about how much she does everything, like she manages all the time, does patient care half the time, etc.
- In (c): there were a variety of tasks described for this category, being the charge nurse, or making the schedule or assignments, or being a preceptor. Those in a hospital setting said it would vary week to week.

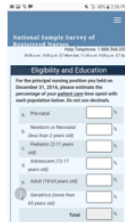
Cognitive issue – B16



60

- Several Rs treated the response option list as mark one and not mark all, because the Question uses the word “most”. The Mark all that apply instruction is in the same place as on other screens where people select multiple items, so it is really a cog issue with the word “most”. That word contradicts the instruction mark all.
 - Recommendation: Either make the question Select one, or remove the word “Most”
- Some choices are missing. Convenience care; the school nurse, internal medicine/family practice (put Ambulatory care).
 - Recommendation: Consider adding some choices.

Cognitive issue (and heading error) – B17b Debrief



61

- Several commented that a 2 year old is not a newborn.
- Several Rs commented that neonatal are very young like 30 days or less. Several also used the term “infant” instead of newborn.
- Infants are less than 1 year and Pediatric as 1-11 years.
- One R commented that instead of geriatrics, a newer term is “Older adults” (however we just heard this from one R)
- Heading says “Eligibility and Education” but shouldn’t it say “Principal Nursing Position”

Measurement error – B17c



62

- It is “mark one” and one R could not select an accurate answer. She works 50/50 on Gyn and Ob. Ultimately she put Gyn as the answer. She said that Ob and Gyn are listed separately on this survey but they really overlap.
- Several categories are missing including:
 - Pediatric
 - Family medicine/internal medicine
 - Convenience care

Measurement error – B18



63

- Many Rs commented that their IT system was terrible but then selected “somewhat” or even to “a great extent”. One R also commented that she didn’t know what the question was referring to -- the EMR system or the IT system.

Possibly biased questions – B19



64

- The questions are phrased that each of these should be a great extent; however, for places where they do not do discharges, it seems like the R is rating the employer poorly. One R said they don’t do discharge planning, but “that doesn’t mean negatively.”
- Recommendation: Unless this is a time series question, redesign this question to first find out what the organization does and then rate the other areas.

Value-based care and other training topics – B20 Debrief

[illegible]

- One R said that the term didn't sound good. Did not know what that was. A few other R's seemed to guess at the meaning.
- 2 R's who both worked in hospitals said that training for psych nurses would be good. It could be described as "Mental health issues training."
- 1 NP said hands-on procedure training for sutures, wound care, etc. would be good. No other comments on training the training topics.
- All other choices seemed reasonable.
- Recommendation: Consider adding those 3 topics ("mental health training" and "procedure training" e.g., x, y, z").
However, one R who had switched jobs between the one she had been at and now, said whether we wanted what training topics would have helped her at her principle job then, or what would help her now, in her new job. The question is written in the present tense and does not refer to her principal job.
- Recommendation: Modify the question if you want R's to think about their principal job.

55

Telehealth – B21 Debrief

Principal Nursing Employment

In the following questions, do not include temporary or seasonal help, but do include contracting through group and/or other, used to correct geographically important positions.

For the principal nursing position you held on December 31, 2017, did your workplace use telehealth?

☐ Yes

☐ No

Principal Nursing Employment

Did you personally use some form of telehealth in the principal nursing position you held on December 31, 2017?

☐ Yes

☐ No

- By in large, R3 knew the general concept of "teletext" was bad but they did not know the specifics and we observed a lot of measurement error. R3 didn't know if their workplace had it.
- Only one R (a NP) described it as something reported by HIPRA and with a special video and audio equipment.
- There will be a lot of measurement error with these questions.
- "I heard about a "teletext" which is basically like a baby-sitter, a person who monitors rooms via cameras and tells patients to get back into beds, or be careful, and then they start filming it and then they send the responses back to a large hospital in MD that definitely has such services but I don't know if it's a HIPRA sponsor. The sponsor said this respondent should have put "yes" and selected no."
- Another R included "Webinars and podcasts" that she uses for staff education as "teletext"

66

Layout issue: F1A

- Two RN Rs almost selected Yes and then caught themselves. It is difficult to diagnose the issue, but it might be because the "State board of Nursing" is underlined.
- Recommendation: Only ask this question if they previously said they were a nurse practitioner.

Nurse Practitioners

On December 31, 2016, did you have an active certification, licensure, or other legal recognition from a State Board of Nursing to practice as a Nurse Practitioner (NP)?

☐ Yes

☒ No

[Previous](#) [Next](#)

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F10 and F11 Debrief



National Sample Survey of Registered Nurses

[Home](#)
[Registration](#)
[Registration Instructions](#)
[Survey Instructions](#)
[Survey](#)

Nurse Practitioners

☐ Yes ☐ No ☐ Yes ☐ No

☐ Yes ☐ No

- We were asked to debrief on these two questions.
- Rs had no difficulty with either question, and were considering working with patients when answering the questions.
- However, we noted that one NP had 2 different jobs, one in 2013 and a different one in 2016. Her workload changed (F12), but it was because of her job change, not because the original job had more work.
- What is the intent of F12? If it is to measure increase patient load, then the survey should make sure the job was the same between those two time periods.

68

Fee reimbursement – F18
Debrief



National Sample Survey of Sengedong Nurses

[Home](#)
[Survey Area Selection](#)
[Survey Information](#)
[Survey](#)



2002-2003, 2004-2005, 2006-2007, 2008-2009

Survey Practitioners

How were medical expenses determined for the majority of your panel of patients?

- ☐ Paid from a source (e.g., HMO and private insurance)
- ☐ Expended from our patients (e.g., HMO)
- ☐ Other
- ☐ Don't know

[Previous](#)
[Next](#)

- This is a difficult question.
- Not all NPs have a panel of patients. Of those who did, they all selected "Don't know"
- There are billing departments and they handle the fees.
- Only one R knew what capitated fees were.
- The examples in fee-for-service were also confusing because one NP said that Medicare is government, so there are Government and Private insurance. Fee-for-service meant out of pocket to some NPs.
- The final report will have more in-depth analysis of this question.
- Recommendation: conduct a focus group to investigate this topic.

69

F8 Debrief

[illegible]

- Largely, this question had no cognitive difficulty because R3 were able to select choices that made sense to them.
- One R pointed out that "I was considered an equal colleague" was more of a feeling than a culture. Other R3 chose the response though and did not comment on it.
- "anyway" is also a "free-stated" meaning you can practice freely and do NOT need a physician to sign off.
- It seems like this question mixes the "culture" of the employment with the "reality" of the employment.
- Recommendation: If you do a focus group for the first question, you should add this question as well.

70

Definition of nursing – H1 and H3

- One R wondered if we wanted to count her LPN years when it asked about how many years she was in nursing at H1
- Another R reported yes to H3, but he was thinking of a job he had as a CNA not an RN. We clarified this during debriefing.
- For both these Rs, they were employed in the field of nursing, if the sponsor wants only RN positions for section H that needs to be clarified.

71

Cognitive issues with Section I

National Practitioner Data Bank

The National Practitioner Data Bank (NPDDB), which includes the healthcare integrity and protection data bank (HIPDB), is a federated repository of negative national-level adverse healthcare practitioners. The primary function is to aid employers in making well-informed hiring decisions. Currently, certain entities are required to report the NPDDB an physician and identify prior to making decisions on hiring and clinical privileges. Do you think the query requirement should be expanded to other healthcare professionals?

☐ Yes, it should be expanded to all healthcare professionals

☐ Yes, it should be expanded to some but not all health care professions

☐ No, it should not be expanded

- Several RNs said that it would depend on the situation and there was not that choice, so Rs spent awhile thinking about how to answer this question. RNs did not know what this national database was about. There is no way to indicate that either in the questionnaire. Several pointed out that reimbursements for NPs is lower than for doctors and if they get treated the same way, they should get paid the same.
- Recommendation: None

72

Attachment B: Quick Report: Including Usability and Accessibility Testing Results

Transition needed - J1



- The transition from the other questions to this one in the general information section is not clear to respondents. The reverse print is not enough to make the distinction.
 - One R said "so it is not where I work."
 - One R said something like, not this question again (because it looks like the other questions about where they work)
- Recommendation: Add, "The next set of questions are about your characteristics." Also, why don't you ask the question more simply, "Where did you live on December 31, 2016?" (Consider putting the text about why the information is critical in nonbold font.)

73

Missing certifications- K2



- One R mentioned two certifications were missing: CCRN – which is an important for critical care and FCCS.

74

Thank you for considering these usability recommendations for the NSSRN.

75

2018 NSSRN Accessibility Evaluation

Lawrence Malakhoff
Center for Survey Measurement
December 14, 2017

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Methods

- Tested with the JAWS screen-reader and the Internet Explorer browser on the MS-Windows 7 desktop
- Tested with the TalkBack screen-reader and the Chrome browser on an Android smartphone

77

Desktop Accessibility Testing Issues

- Screen reader users will never hear the warning text on the log in screen because it is below the sign in button
- The login fields do not auto-tab after the first four digits of the ID are entered into the first field, requiring the user to tab to the second field to enter the last four digits
- Some drop-down menus for the state response are populated with state abbreviations instead of fully spelled out state names
- Instructions to "mark one box" and "mark all that apply" are for paper survey forms, not Web surveys
- Typographical errors

78

The warning message is never heard



79

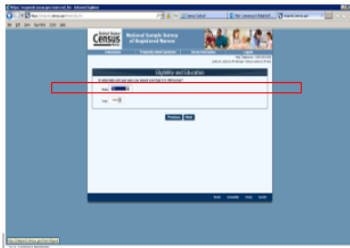
No auto-tab on the login field



80

Attachment B: Quick Report: Including Usability and Accessibility Testing Results

Abbreviations used for State names



81

Artifacts from the Paper survey are present



82

Typographical Errors



83

Mobile Accessibility Testing Issues

- Same issues as desktop for warning text, state drop-downs, typographical errors, and paper form artifacts
- The login fields do not auto-tab after the first four digits of the ID are entered into the first field, requiring the user to swipe right to the second field to enter the last four digits
- Previous/Next navigation worked until question A10 (show-stopper)
- On question B1, text from question A12a was read

84

Previous/Next Navigation inaccessible beginning with Question A10



85

Satisfaction Results

Participants were asked to complete an electronic satisfaction questionnaire immediately after completing the online NSSRN. The questionnaire was structured as a series of Likert-like scales gathering feedback about different aspects of the online questionnaire. The questions, mean score and standard deviation are reported in Table 4.

Overall, participants were satisfied with the questionnaire; however, examining the standard deviations, we find that those greater than 1 were related to the problems in the questionnaire including use of terminology (see Attachment B, Cognitive issue slides 47+), organization of questions (see Attachment B, slides 44, 45, 57, and 73), and correcting mistakes (see Attachment B, slides 10 and 11).

Table 4: Participants' Satisfaction ratings with specific aspects of the instrument

Question	Mean	Std. Dev	Num of NA
1. Overall reaction to the Web Survey: Terrible 1 2 3 4 5 6 7 Wonderful NA	5.3	0.6	0
2. Screen Layouts: Illogical 1 2 3 4 5 6 7 Logical NA	6.2	0.8	0
3. Use of terminology throughout the survey: Inconsistent 1 2 3 4 5 6 7 Consistent NA	5.9	1.1	0
4. Instructions displayed on the screens: Inadequate 1 2 3 4 5 6 7 Adequate NA	6.3	0.8	0
5. Questions displayed on the screens: Confusing 1 2 3 4 5 6 7 Clear NA	6.1	0.6	0
6. Questions can be answered in a straight forward manner: Never 1 2 3 4 5 6 7 Always NA	5.4	0.7	0
7. Organization of questions, instructions and response categories in survey: Confusing 1 2 3 4 5 6 7 Clear NA	5.8	1.3	0
8. Forward navigation: Difficult 1 2 3 4 5 6 7 Easy NA	6.7	0.5	0
9. Overall experience of completing the survey: Difficult 1 2 3 4 5 6 7 Easy NA	6.3	0.8	0
10. Correcting your mistakes: Difficult 1 2 3 4 5 6 7 Easy NA	5.9	1.7	1
11. Reading text: Extremely Difficult Somewhat Difficult Borderline Somewhat Easy Extremely Easy NA	4.7	0.5	0
12. Typing text: Extremely Difficult Somewhat Difficult Borderline Somewhat Easy Extremely Easy NA	4.6	0.6	0
13. Clicking links/radio buttons: Extremely Difficult Somewhat Difficult Borderline Somewhat Easy Extremely Easy NA	4.8	0.6	5
14. Zooming in or out: Extremely Difficult Somewhat Difficult Borderline Somewhat Easy Extremely Easy NA	5.0	0	13

Source: 2018 NSSRN Usability Testing (n=15)

Attachment D: Selected NSSRN screens for eye tracking

Eye tracking Data

In this attachment we provide selected NSSRN screens with heat maps, fixation counts and fixation durations for seven participants who used the PC. These data can be used as a benchmark for future iterations of the survey.

Login screen:

The heat map in Figure 40 shows that the login ID fields generated the most fixations. On the entire screen, the mean fixation count is 67.43 with a range from 3 to 176. The total fixation duration is 12.2 seconds with a range of 0.70 to 20.4. Very few of the seven participants looked at the Warning message at the bottom of the screen. However, much of that screen was below the fold (meaning participants would have to scroll to see it.)

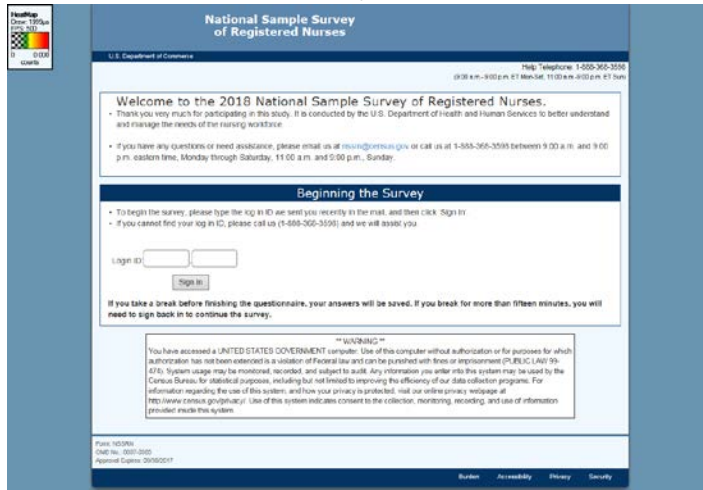


Figure 39: Login screen

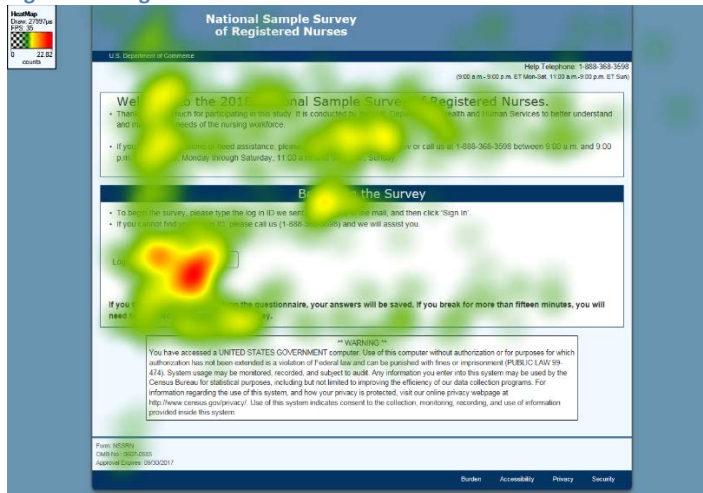


Figure 40: Heat map of login screen (n=7)

Attachment D: Selected NSSRN screens for eye tracking

Privacy Act screen:

The heat map in Figure 41 shows the privacy act screen. The red area, indicating more fixations, occurred because of the typographical error where the word “or” was instead printed with a space between the “o” and the “r” as shown in Figure 42.

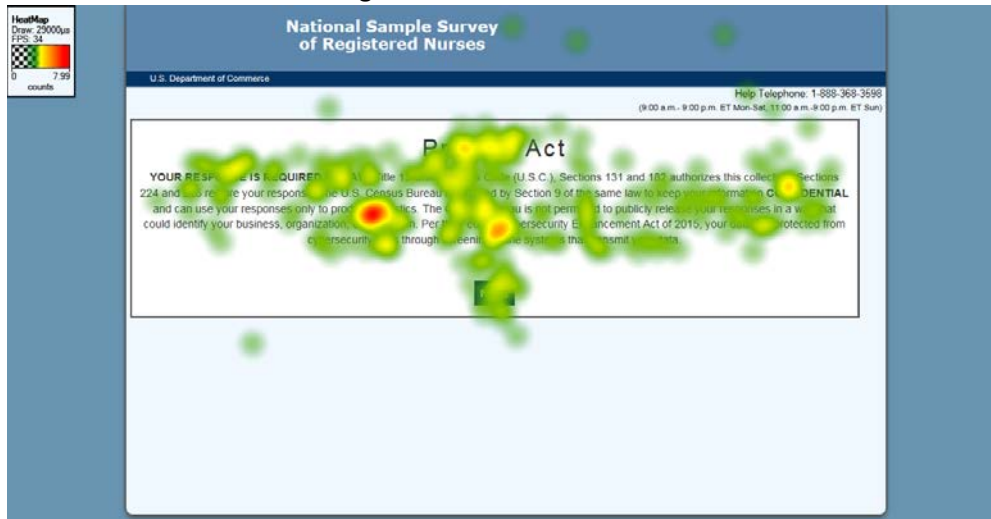


Figure 41: Heat map of Privacy Act screen (n=7)

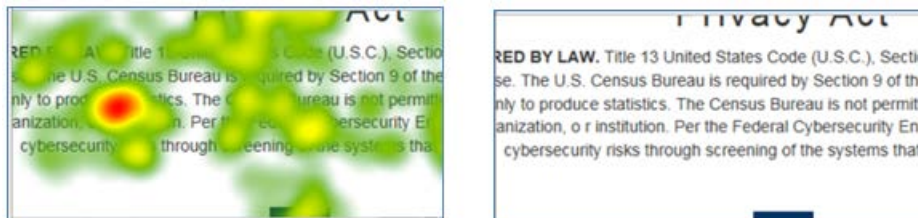


Figure 42: Blow up of the heat map with the red area and then that same area without the heat map, showing that the "o r" generated additional fixations.

PIN screen:

The heat map in Figure 43 shows fixations on the PIN and on the verification question. On the entire screen, the mean number of fixations was 49 with a standard deviation of 24 and a range of 7 to 76. The mean total fixation duration is 9.27 seconds with a standard deviation of 5.1 seconds and a range of .57 seconds to 15 seconds.

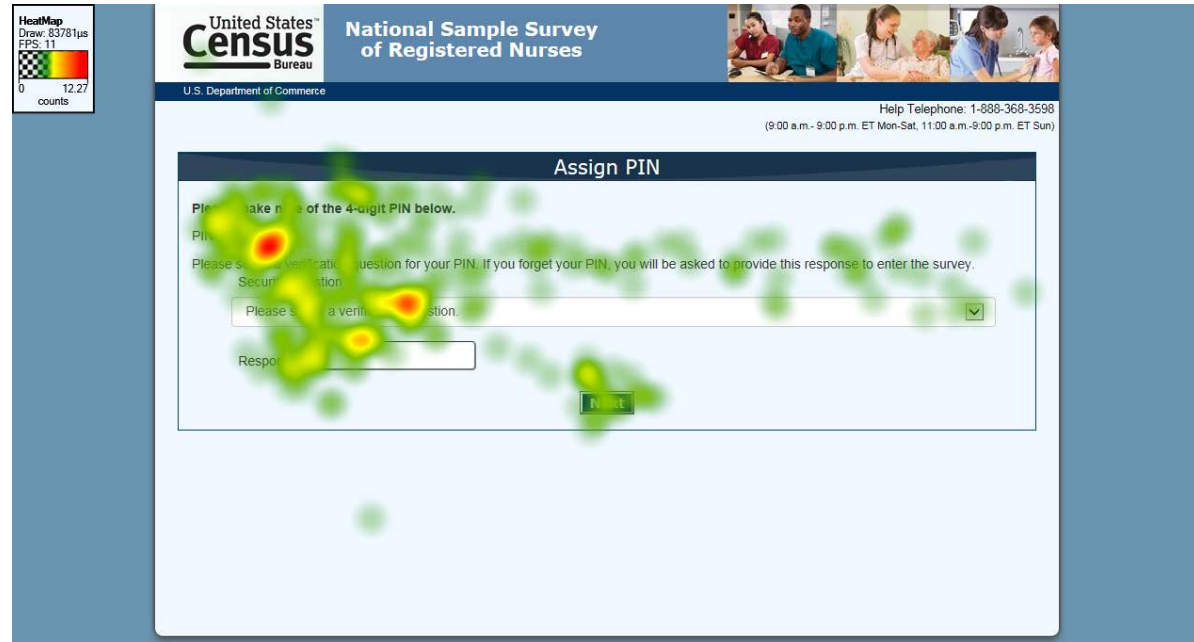


Figure 43: Heat map of PIN screen (n=7)

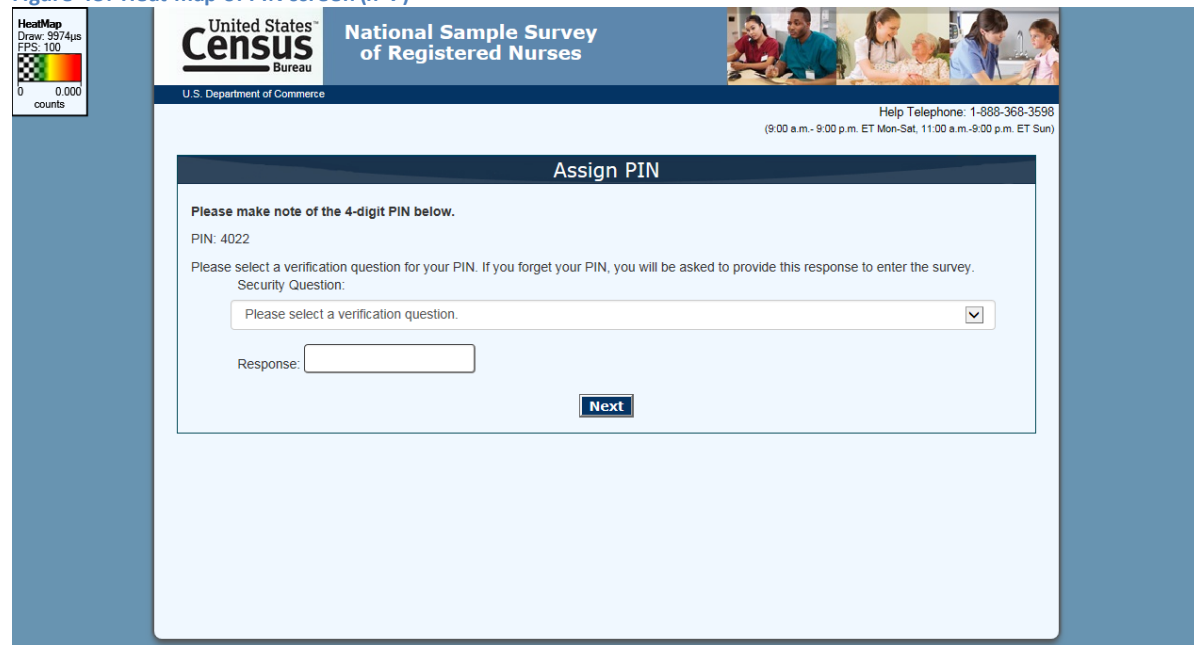


Figure 44: PIN screen

Filter screen for survey:

This screen was answered incorrectly by a few participants. The heat map in Figure 45 shows fixations throughout the question. On the entire screen, the mean number of fixations was 48.7 with a range of 4 to 112 and the average fixation duration was 8.57 seconds with a range of 0.48 to 19.4.

Attachment D: Selected NSSRN screens for eye tracking

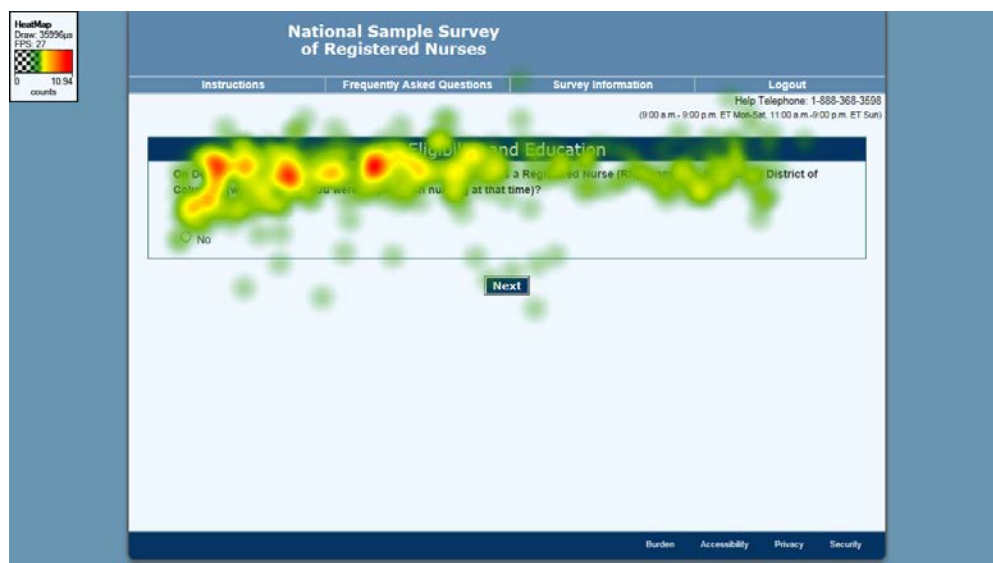


Figure 45: Heat map of filter screen for survey (n=7)

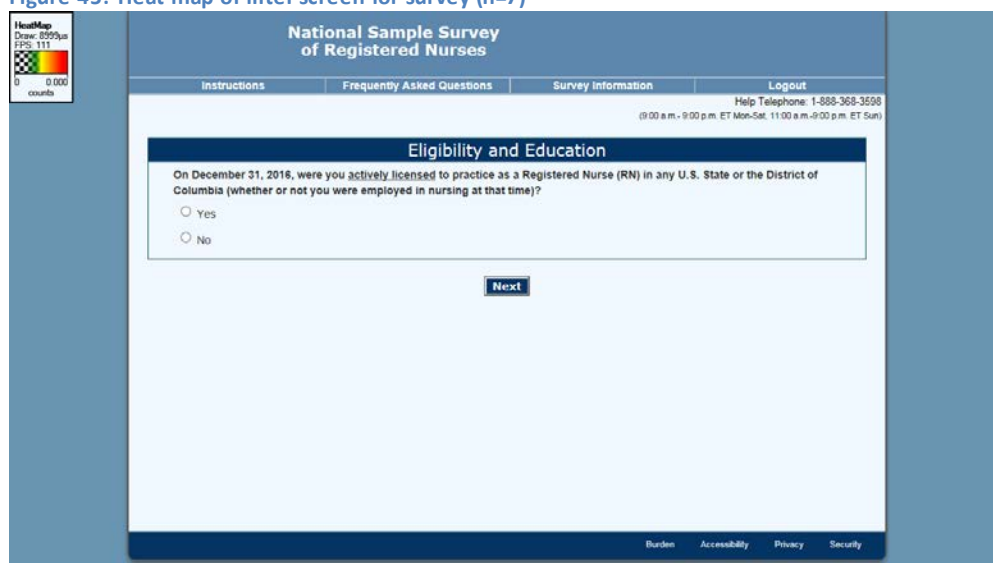


Figure 46: Filter screen for survey

Attachment D: Selected NSSRN screens for eye tracking

Prior health-related jobs

Several participants commented that there were few if any difference between the first two response choices and the heat map in Figure 47 shows concentration of fixations on those choices. The mean number of fixations on the screen was 84.1 with a range of 18 to 249. The mean fixation duration was 15.03 seconds with a range of 1.07 to 50.80.

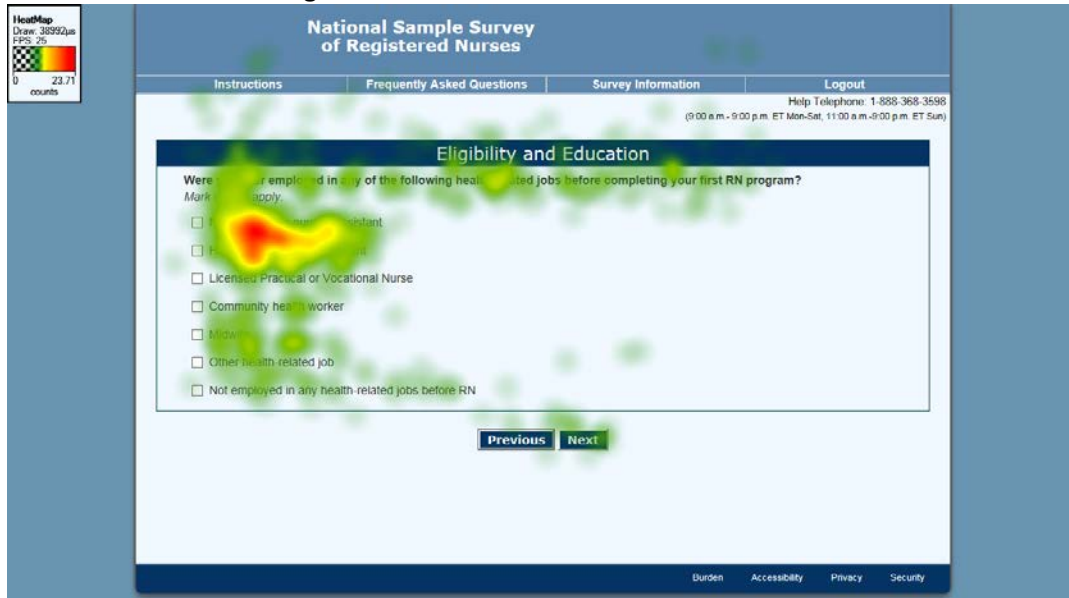


Figure 47: Heat map of health-related employment prior to first RN degree (n=7)

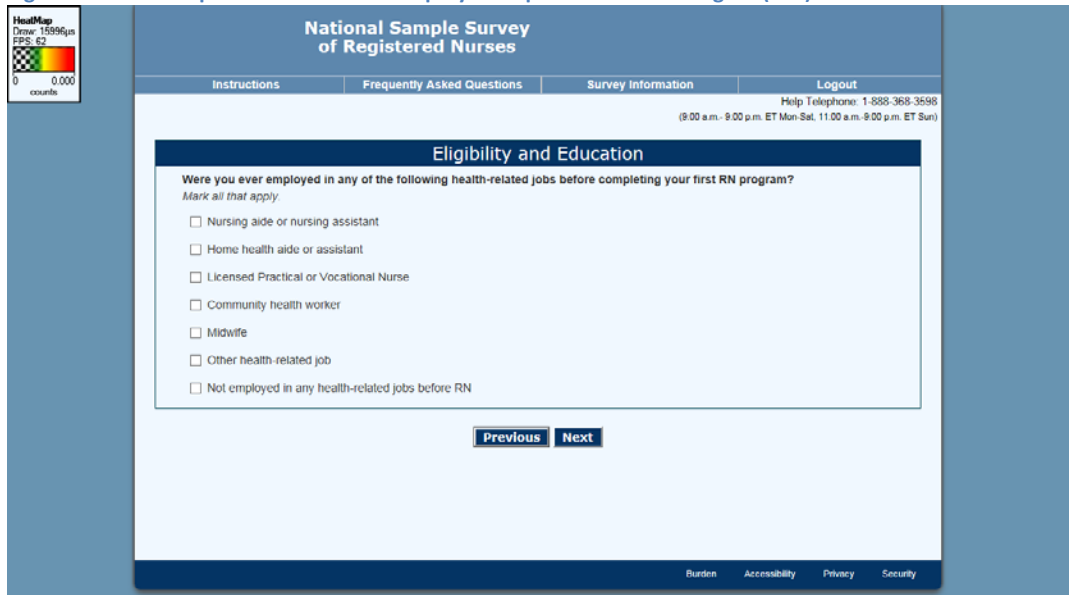


Figure 48: Heath-related employment prior to first RN degree question

Number of hours at work

There were problems with the design and wording of the second part of the number of hours at work question. Several participants understood that they should enter their salary rate, and not the number of hours. The heat map in Figure 49 shows concentration of fixations on the wording and section of the screen. The mean number of fixations on the screen was 133.1 with a range of 45 to 267. The mean fixation duration was 19.6 with a range of 4.8 to 38.2.



Figure 49: Heat map of number of hours worked question (n=7)

Figure 50: Number of hours worked question

Emphasis at work

There were no cognitive or usability problems with the design and wording of this question; however, using dropdowns for fewer than seven choices is not typically recommended. Other surveys have used an item-by-item design for mobile or a grid on PC for the same type of question. The heat map in Figure 51 shows concentration of fixations on the wording and section of the screen. The mean number of

Attachment D: Selected NSSRN screens for eye tracking

fixations on the screen was 54.4 with a range of 9 to 164. The mean fixation duration was 8.9 seconds with a range of 1.0 to 32.5.

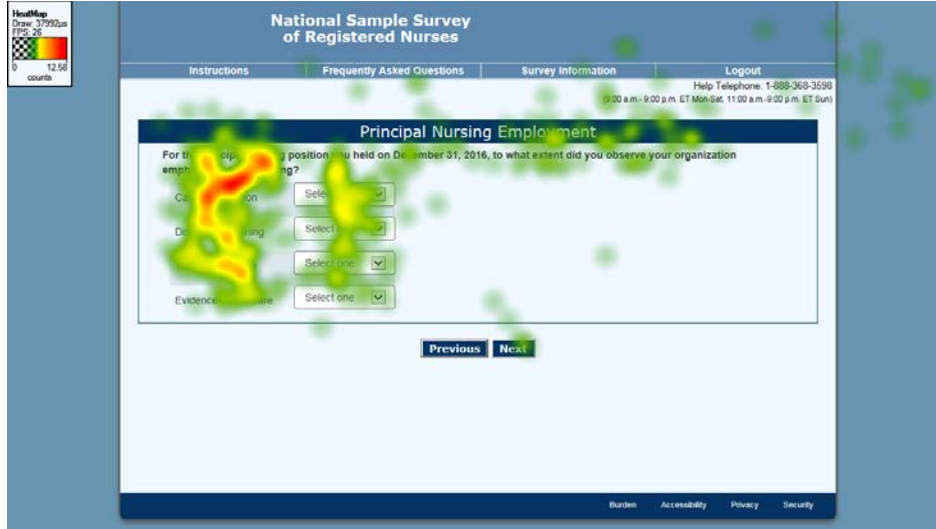


Figure 51: Heat map organizational emphasis question (n=7)

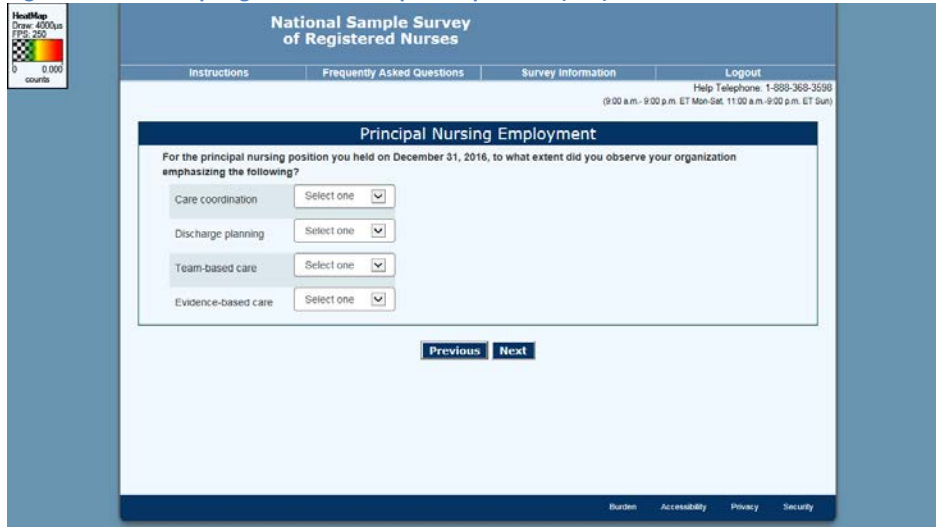


Figure 52: Organizational emphasis question

Financing the registered nurse degree

Several participants wanted a category for parent-financed and the heat map in Figure 53 shows fixations throughout the response choices on the screen. The mean number of fixations on the screen was 83 with a range of 19 to 152. The mean fixation duration was 14.2 seconds with a range of 1.9 seconds to 29.4 seconds.

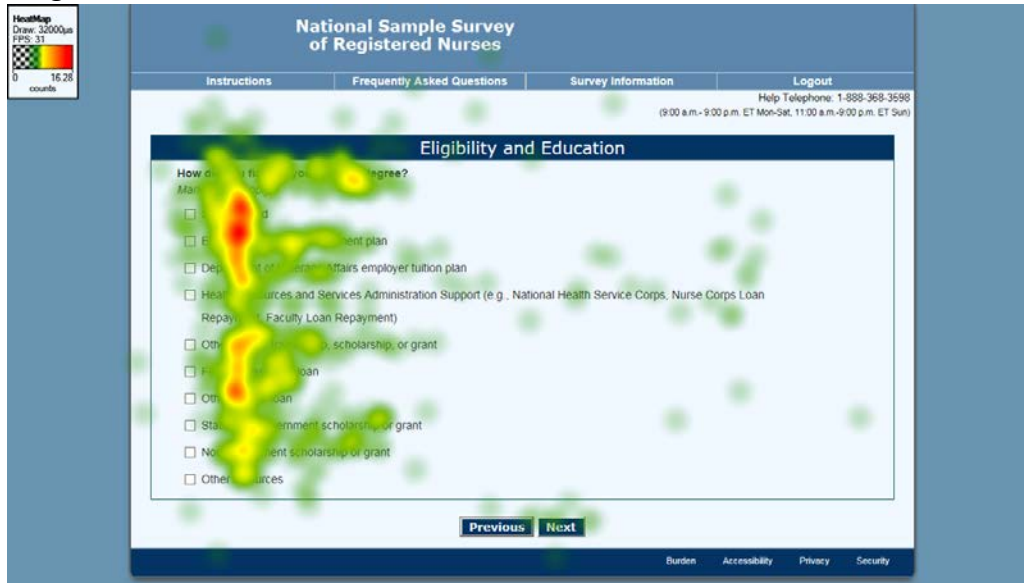


Figure 53: Heat map of question about how financed first RN degree (n=7)

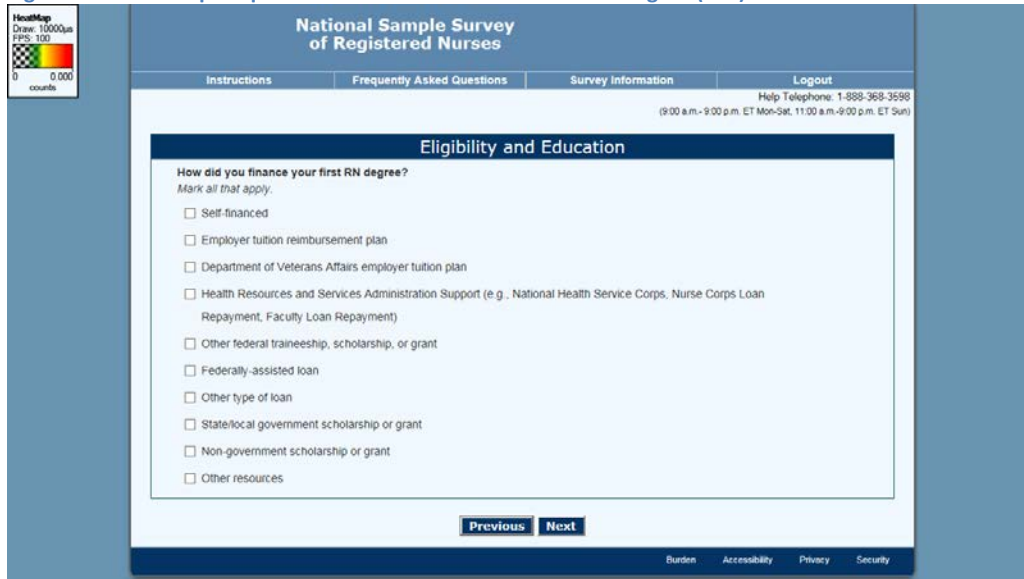


Figure 54: Financing first RN degree question

**2018 NATIONAL
SAMPLE SURVEY OF REGISTERED NURSES**

Start Here

Respond online today at:
<https://respond.census.gov/nssrn>

OR

Complete this form and mail it back as soon as possible.

The 2018 National Sample Survey of Registered Nurses (NSSRN) is being conducted by the United States Census Bureau on behalf of the Health Resources and Services Administration of the U.S. Department of Health and Human Services and is the tenth cycle of the survey.

We appreciate your help with this important survey. If you need help or have questions about completing this form, please call 1-888-369-3598 or email us at NSSRN@census.gov.

FORM NSSRN
(02/01/2018)

**Section A.
Eligibility and Education**

A1a. As of December 31, 2017, were you actively licensed to practice as a Registered Nurse (RN) in the U.S. (whether or not you were employed in nursing at that time)?

☐ Yes

☐ No → If No, you do not need to complete this questionnaire. Please mark "No" and return this questionnaire in the envelope provided so we know you are not eligible.

A1b. What state(s) issued the license(s)?
List up to 4.

State State State State

☐ Check this box if you were issued a license by more than 4 states.

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A2. In what state and year were you issued your first U.S. RN license?

State Year

A3. Which type of nursing degree qualified you for your first U.S. RN license? Mark all that apply.

☐ Diploma
☐ Associate
☐ Bachelor's
☐ Master's
☐ Doctorate - PhD
☐ Doctorate - DNP
☐ Other

A4. In what month and year did you graduate from this RN program?

Month Year

A5. Where was this program located?

☐ In the U.S. Print state abbreviation. →

☐ Outside the U.S. Print name of foreign country or U.S. territory.

A6. What post-high school degree(s) did you receive before starting your first RN program? Mark all that apply.

☐ Associate
☐ Bachelor's
☐ Master's
☐ Doctorate
☐ Other
☐ None

A7. Have you ever been licensed as a Licensed Practical Nurse (LPN) or Licensed Vocational Nurse (LVN) in the U.S.?

☐ Yes
☐ No

A8. Were you ever employed in any of the following health-related jobs before completing your first RN program? Mark all that apply.

☐ Nursing aide or nursing assistant
☐ Home health aide or assistant
☐ Licensed Practical or Vocational Nurse
☐ Community health worker
☐ Midwife
☐ Other health-related job

A9. How did you finance your first RN degree? Mark all that apply.

☐ Self-financed (personal savings, earnings from employment, money from spouse or family members, etc.)
☐ Employer tuition reimbursement plan
☐ Department of Veterans Affairs employer tuition plan
☐ Health Resources and Services Administration Support (e.g., National Health Service Corps, Nurse Corps Loan Repayment, Faculty Loan Repayment)
☐ Other federal traineeship, scholarship, or grant
☐ Federally-assisted student loan
☐ Other type of student loans
☐ State/local government scholarship or grant
☐ Non-government scholarship or grant
☐ Other resources

2

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A10. Did you earn any additional academic degrees after acquiring your first RN degree that you described in Question A3? Do not include degrees you are currently working towards.

☐ Yes → Please complete all rows of the table below for each degree you earned

☐ No → SKIP to Question A11 on page 4

	Nursing Degrees				
	Associate in nursing	Bachelor's in nursing	Master's in nursing	Another Master's in nursing	Doctorate in nursing (PhD, EdD, DNS, NDN, DNP)
A10a. In what year did you receive this degree?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10b. In what U.S. state or foreign country was this program located?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10c. Was 50% or more of the coursework for this degree online or through correspondence?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
A10d. What was the primary focus of this degree? Enter two-digit code from the table at the bottom of the page.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

	Non-nursing Degrees				
	Associate (Non-nursing)	Bachelor's (Non-nursing)	Master's (Non-nursing)	Another Master's (Non-nursing)	Doctorate in non-nursing field (PhD, EdD, MEd, LEd)
A10e. In what year did you receive this degree?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10f. In what U.S. state or foreign country was this program located?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A10g. Was 50% or more of the coursework for this degree online or through correspondence?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
A10h. What was the primary focus of this degree? Enter two-digit code from the table below.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Primary focus of degree					
01 Clinical Practice	05 Public Health/Community Health	09 Information Technology/Informatics			
02 Clinical Nurse Leader	06 Law	10 Research			
03 Administration/Business Management	07 Biological or Physical Sciences	11 Other health field			
04 Education	08 Humanities, Liberal Arts, or Social Sciences	12 Other non-health field			

3

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A11. After acquiring your first RN degree, which you described in Question A3, have you completed a formal U.S. education program preparing you to be a Nurse Practitioner, Clinical Nurse Specialist, Nurse-Midwife, or Nurse Anesthetist?

☐ Yes

☐ No → SKIP to Question A12a

	Nurse Practitioner	Clinical Nurse Specialist	Nurse-Midwife	Nurse Anesthetist
A11a. Did you receive preparation as a...? Mark each column if yes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A11b. What was the highest credential you received in that program?				
1. Certificate/Award	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Bachelor's Degree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Master's Degree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Post-Master's Certificate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Doctorate - PhD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Doctorate - DNP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Doctorate - other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A11c. In what year did you receive this credential?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

A12a. During the Fall term of 2017, were you enrolled in a formal education program leading to an academic degree or certificate?

☐ Yes, in nursing
☐ Yes, in a non-nursing field
☐ No → SKIP to Section B on page 5

A12b. Were you a full-time or part-time student?

☐ Full-time student
☐ Part-time student

A12c. What percentage of your coursework in this program was distance-based (online or correspondence)?

☐ ≤ 50%
☐ > 50%

A12d. What type of degree or certificate were you working toward in this program? Mark one box only.

☐ Certificate/Award
☐ Associate Degree
☐ Bachelor's Degree
☐ Master's Degree
☐ Post-Master's Certificate
☐ Doctorate - PhD
☐ Doctorate - DNP
☐ Doctorate - other

Continue to Section B

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Attachment D: Selected NSSRN screens for eye tracking

Section B. Primary Nursing Employment

B1. On December 31, 2017, were you employed or self-employed in nursing? *Employed in nursing includes working for pay in nursing, even if on temporary leave.*

☐ Yes
☐ No → SKIP to Section F on page 13

For all the questions in this section (Questions B2 - B20), your primary nursing position is the nursing position, on December 31, 2017, in which you spent the largest share of your working hours.

B2. Where was the location of the primary nursing position you held on December 31, 2017? *If you were not employed in a fixed location, enter the location that best reflects where you practiced.*

City/Town:

County:

State (or country if not U.S.A.):

Zip:

B3. Thinking about the primary nursing position you held on December 31, 2017, had you been working for this employer for less than 5 years?

☐ Yes
☐ No → SKIP to Question B7

B4. How long were you actively looking for new employment before accepting a position with this employer?

☐ 1 - 6 months
☐ 7 - 12 months
☐ More than a year
☐ I was not actively looking for new employment

B5. Did you go through an orientation program for the primary nursing position you held on December 31, 2017?

☐ Yes
☐ No → SKIP to Question B7

B6. Did you have a preceptor assigned to you during this orientation program?

☐ Yes
☐ No

B7. Were you required to maintain an active RN license for the primary nursing position you held on December 31, 2017?

☐ Yes
☐ No

B8. In your primary nursing position did you use an Electronic Health Record (EHR) or Electronic Medical Record (EMR) system? *Do not include billing record systems.*

☐ Yes
☐ No
☐ Don't know

B9. As of December 31, 2017, what type(s) of training have you received to facilitate team-based care? *Team-based care refers to comprehensive health services by at least two health professionals working collaboratively to provide safe, quality care. Mark all that apply.*

☐ Formal classroom training at my college or university
☐ Formal classroom training offered by my place of employment
☐ Online educational videos offered by my place of employment
☐ Informal training (e.g., on the job)
☐ No training at all
☐ Other, Specify:

B10. For the primary nursing position you held on December 31, 2017, which of the following best describes your employment situation? *Mark one box only.*

☐ Employed through an employment agency as a traveling nurse
☐ Employed through an employment agency, but not as a traveling nurse
☐ Employed by the organization or facility at which I was working
☐ Self-employed or working as needed

B11. For the primary nursing position you held on December 31, 2017, did you work full-time or part-time? *Mark one box only.*

☐ Full-time (including full-time for an academic year)
☐ Part-time (including working only part of the calendar or academic year)

B12. For the primary nursing position you held on December 31, 2017, how many months did you normally work per year?

months per year

B13. Which one of the following best describes the employment setting of the primary nursing position you held on December 31, 2017? *Mark one box only.*

Hospital (not mental health)

☐ Critical Access Hospital (CAH) – a rural community hospital that receives cost-based reimbursement from Medicare
☐ Inpatient unit, not Critical Access Hospital
☐ Emergency Department, not Critical Access Hospital
☐ Hospital sponsored ambulatory care (outpatient, surgery, clinic, urgent care, etc.)
☐ Hospital ancillary unit
☐ Hospital nursing home unit
☐ Hospital administration
☐ Hospital other, Specify:

Clinic/Ambulatory

☐ Nurse managed health center
☐ Private medical practice (clinic, physician office, etc.)
☐ Public clinic (Rural Health Center, FQHC, Indian Health Service, Tribal Clinic, etc.)
☐ School health service (K-12 or college)
☐ Outpatient mental health/substance abuse
☐ Urgent care (not hospital-based)
☐ Ambulatory surgery center (free standing)
☐ Other, Specify:

Other inpatient setting

☐ Nursing home unit NOT in hospital
☐ Rehabilitation facility/long-term care
☐ Inpatient mental health/substance abuse
☐ Correctional facility
☐ Inpatient hospice
☐ Other inpatient setting, Specify:

Other types of settings

☐ Home health agency/service
☐ Occupational health or employee health service
☐ Public health or community health agency (not a clinic)
☐ Government agency other than public/community health or correctional facility
☐ Outpatient dialysis center
☐ University or college academic department
☐ Insurance company
☐ Call center/tele nursing center
☐ Other, Specify:

B14. Next, we will ask for information about how much you worked in a typical week for the primary nursing position you held on December 31, 2017. *Include on-call hours except on-call hours that were stand-by only.*

Hours (enter 0 if none)

a. Number of hours scheduled in a typical week:

b. Number of hours worked in a typical week:

c. Number of hours per week worked at the regular pay rate:

d. Number of hours per week worked at a differential rate: evening, weekend, night, or charge:

e. Number of hours per week worked at the overtime pay rate:

f. Number of hours unpaid in a typical week:

B15. For the primary nursing position you held on December 31, 2017, please estimate the percentage of your time spent in the following activities during a typical workweek. *Do not use decimals.*

a. Patient care and charting: %

b. Care coordination (including consultation with agencies and/or professionals): %

c. Management, supervision, and administrative tasks: %

d. Research: %

e. Teaching, precepting or orienting students or new hires (include preparation time): %

f. Non-nursing tasks (e.g., housekeeping, locating supplies): %

g. Other: %

Total = 100%

B16. For the primary nursing position you held on December 31, 2017, in what level of care or type of work did you spend most of your time? *Mark one box only.*

☐ General or specialty inpatient
☐ Ambulatory care (including primary care outpatient settings, except surgical)
☐ Ancillary care (radiology, laboratory)
☐ Care coordination/patient navigation
☐ Critical/intensive care
☐ Education
☐ Emergency
☐ Health care management/administration
☐ Home health/hospice
☐ Informatics
☐ Long-term care/nursing home
☐ Public health/community health
☐ Rehabilitation
☐ Research
☐ School nurse
☐ Step-down, transitional, progressive, telemetry
☐ Sub-acute care
☐ Surgery (including ambulatory, pre-operative, post-operative, post-anesthesia)
☐ Urgent care
☐ Other, Specify:

B17a. Did the primary nursing position you held on December 31, 2017, include any patient care?

☐ Yes
☐ No → SKIP to Question B18 on page 9

B17b. For the primary nursing position you held on December 31, 2017, please estimate the percentage of your patient care time spent with each population below. *Do not use decimals.*

Pre-natal: %

Neonatal, Newborn, or Infant (less than 2 years old): %

Pediatric (2 to 11 years old): %

Adolescent (12 to 17 years old): %

Adult (18 to 65 years old): %

Geriatric (more than 65 years old): %

Total = 100%

B17c. For the primary nursing position you held on December 31, 2017, in what type of clinical specialty did you spend most of your patient care time? *Mark one box only.*

☐ General medical surgical
☐ Ambulatory care
☐ Cardiac or cardiovascular care
☐ Chronic care
☐ Critical care
☐ Dermatology
☐ Emergency or trauma care
☐ Endocrinology
☐ Gastrointestinal
☐ Gynecology (women's health)
☐ Home health/hospice
☐ Infectious/communicable disease
☐ Labor and delivery
☐ Neurological
☐ Obstetrics
☐ Occupational health
☐ Oncology
☐ Ophthalmology
☐ Orthopedics
☐ Otolaryngology (ear, nose and throat)
☐ Primary care
☐ Psychiatric or mental health (substance abuse and counseling)
☐ Pulmonary/respiratory
☐ Radiology (diagnostic or therapeutic)
☐ Renal/dialysis
☐ Other specialty, Specify:

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[illegible]

<p>Section G. Nurses Not Working in Nursing</p> <p><i>If you were working for pay in nursing on December 31, 2017, please SKIP to Section H.</i></p> <p>G1. What are your intentions regarding paid work in nursing? <i>Mark one box only.</i></p> <p><input type="checkbox"/> Actively looking for work in nursing</p> <p><input type="checkbox"/> Plan to return to nursing in the future, not looking for work now → <i>SKIP to Question G4</i></p> <p><input type="checkbox"/> No future intention to work for pay in nursing → <i>SKIP to Question G5a</i></p> <p><input type="checkbox"/> Undecided at this time → <i>SKIP to Question G5a</i></p> <p><input type="checkbox"/> Have returned to nursing since December 31, 2017 → <i>SKIP to Section H</i></p> <p>G2. How long have you been actively looking for paid work in nursing? <i>Enter zero if less than one month.</i></p> <p><input type="text"/> Month(s)</p> <p>G3. Are you looking for a position that is full-time or part-time?</p> <p><input type="checkbox"/> Full-time → <i>SKIP to Question G5a</i></p> <p><input type="checkbox"/> Part-time → <i>SKIP to Question G5a</i></p> <p><input type="checkbox"/> Either → <i>SKIP to Question G5a</i></p> <p>G4. When do you plan to return to paid work in nursing? <i>Enter zero if less than one year.</i></p> <p><input type="text"/> Year(s)</p> <p>G5a. Have you ever been employed or self-employed in nursing?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → <i>SKIP to Question G6</i></p> <p>G5b. How long has it been since you were last employed or self-employed as a nurse? <i>Enter zero if less than one year.</i></p> <p><input type="text"/> Year(s)</p> <p>G6. What are the primary reasons you were not working in a nursing position for pay on December 31, 2017? <i>Mark all that apply.</i></p> <p><input type="checkbox"/> Burnout</p> <p><input type="checkbox"/> Career change</p> <p><input type="checkbox"/> Difficulty finding a nursing position</p> <p><input type="checkbox"/> Disability/illness</p> <p><input type="checkbox"/> Family caregiving</p> <p><input type="checkbox"/> Inability to practice nursing on a professional level</p> <p><input type="checkbox"/> Inability to practice to the full extent of my license</p> <p><input type="checkbox"/> Inadequate staffing</p> <p><input type="checkbox"/> Lack of advancement opportunities</p> <p><input type="checkbox"/> Lack of collaboration/communication between health care professionals</p> <p><input type="checkbox"/> Lack of good management or leadership</p> <p><input type="checkbox"/> Liability concerns</p> <p><input type="checkbox"/> Physical demands of job</p> <p><input type="checkbox"/> Retirement</p> <p><input type="checkbox"/> Salaries too low/better pay elsewhere</p> <p><input type="checkbox"/> Scheduling/inconvenient hours/too many hours/too few hours</p> <p><input type="checkbox"/> School/educational program</p> <p><input type="checkbox"/> Skills are out-of-date</p> <p><input type="checkbox"/> Stressful work environment</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p> <p>Continue to Section H</p> <p>Section H. Prior Nursing Employment</p> <p>H1. How many years have you worked in nursing since receiving your first U.S. RN license? <i>Count only the years in which you worked at least 6 months. Enter zero if less than one year.</i></p> <p><input type="text"/> Year(s)</p>	<p>H2. Have you left work in nursing for one or more years since becoming an RN? <i>Enter zero if less than a year.</i></p> <p><input type="checkbox"/> Yes → For how many years? <input type="text"/></p> <p><input type="checkbox"/> No</p> <p>H3. Next, we are going to ask about your employment approximately one year ago. Were you employed in nursing on December 31, 2016?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → <i>SKIP to Section I on page 20</i></p> <p>H4. For the primary nursing position you held on December 31, 2016, did you work full-time or part-time? <i>Mark one box only.</i></p> <p><input type="checkbox"/> Full-time (including full-time for an academic year)</p> <p><input type="checkbox"/> Part-time (including working only part of the calendar or academic year)</p> <p>H5. How would you describe the primary nursing position you held on December 31, 2016?</p> <p><input type="checkbox"/> Same position and same employer as primary nursing position on December 31, 2017 → <i>SKIP to Section I on page 20</i></p> <p><input type="checkbox"/> Different position but same employer as primary nursing position held on December 31, 2017</p> <p><input type="checkbox"/> Different employer than primary nursing position held on December 31, 2017</p> <p>H6. What was the location of the primary nursing position you held on December 31, 2016? <i>If you were not employed in a fixed location, enter the location that best reflects where you practiced.</i></p> <p>City/Town: <input type="text"/></p> <p>County: <input type="text"/></p> <p>State (or country if not U.S.A.): <input type="text"/></p> <p>Zip: <input type="text"/></p> <p>H7. What were the primary reason(s) for your employment change? <i>Mark all that apply.</i></p> <p><input type="checkbox"/> Better pay/benefits</p> <p><input type="checkbox"/> Burnout</p> <p><input type="checkbox"/> Career advancement/promotion</p> <p><input type="checkbox"/> Career change</p> <p><input type="checkbox"/> Change in child's school</p> <p><input type="checkbox"/> Disability/illness</p> <p><input type="checkbox"/> Family caregiving</p> <p><input type="checkbox"/> Inability to practice to the full extent of my license</p> <p><input type="checkbox"/> Inadequate staffing</p> <p><input type="checkbox"/> Interpersonal differences with colleagues or supervisors</p> <p><input type="checkbox"/> Lack of advancement opportunities</p> <p><input type="checkbox"/> Lack of collaboration/communication between health care professionals</p> <p><input type="checkbox"/> Lack of good management or leadership</p> <p><input type="checkbox"/> Laid off/downsizing of staff</p> <p><input type="checkbox"/> Length of commute</p> <p><input type="checkbox"/> Patient population</p> <p><input type="checkbox"/> Physical demands of job</p> <p><input type="checkbox"/> Relocation to different geographic area</p> <p><input type="checkbox"/> Retirement</p> <p><input type="checkbox"/> Scheduling/inconvenient hours/too many hours/too few hours</p> <p><input type="checkbox"/> School/educational program</p> <p><input type="checkbox"/> Sign-on bonus offered</p> <p><input type="checkbox"/> Spouse's employment opportunities</p> <p><input type="checkbox"/> Stressful work environment</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p>
<p>H8. Which one of the following best describes the employment setting of the primary nursing position you held on December 31, 2016? <i>Mark one box only.</i></p> <p>Hospital (not mental health)</p> <p><input type="checkbox"/> Critical Access Hospital (CAH) – a rural community hospital that receives cost-based reimbursement from Medicare</p> <p><input type="checkbox"/> Inpatient unit, not Critical Access Hospital</p> <p><input type="checkbox"/> Emergency Department, not Critical Access Hospital</p> <p><input type="checkbox"/> Hospital sponsored ambulatory care (outpatient, surgery, clinic, urgent care, etc.)</p> <p><input type="checkbox"/> Hospital ancillary unit</p> <p><input type="checkbox"/> Hospital nursing home unit</p> <p><input type="checkbox"/> Hospital administration</p> <p><input type="checkbox"/> Hospital other, Specify: <input type="text"/></p> <p>Other inpatient setting</p> <p><input type="checkbox"/> Nursing home unit NOT in hospital</p> <p><input type="checkbox"/> Rehabilitation facility/long-term care</p> <p><input type="checkbox"/> Inpatient mental health/substance abuse</p> <p><input type="checkbox"/> Correctional facility</p> <p><input type="checkbox"/> Inpatient hospice</p> <p><input type="checkbox"/> Other inpatient setting, Specify: <input type="text"/></p> <p>Clinic/Ambulatory</p> <p><input type="checkbox"/> Nurse managed health center</p> <p><input type="checkbox"/> Private medical practice (clinic, physician office, etc.)</p> <p><input type="checkbox"/> Public clinic (Rural Health Center, FQHC, Indian Health Service, Tribal Clinic, etc.)</p> <p><input type="checkbox"/> School health service (K-12 or college)</p> <p><input type="checkbox"/> Outpatient mental health/substance abuse</p> <p><input type="checkbox"/> Urgent care (not hospital based)</p> <p><input type="checkbox"/> Ambulatory surgery center (free standing)</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p> <p>Other types of settings</p> <p><input type="checkbox"/> Home health agency/service</p> <p><input type="checkbox"/> Occupational health or employee health service</p> <p><input type="checkbox"/> Public health or community health agency (not a clinic)</p> <p><input type="checkbox"/> Government agency other than public/community health or correctional facility</p> <p><input type="checkbox"/> Outpatient dialysis center</p> <p><input type="checkbox"/> University or college academic department</p> <p><input type="checkbox"/> Insurance company</p> <p><input type="checkbox"/> Call center/tele nursing center</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p> <p>Continue to Section I</p>	<p>Section I. National Practitioner Data Bank</p> <p>I1. The National Practitioner Data Bank (NPDB), which includes the Healthcare Integrity and Protection Data Bank (HIPDB), is a nationwide repository of negative actions taken against health care professionals. Its primary function is to aid employers in making well-informed hiring decisions. Currently, certain entities are required to query the NPDB on physicians and dentists, prior to making decisions on hiring and clinical privileges. Do you think the query requirement should be expanded to other health care professions?</p> <p><input type="checkbox"/> Yes, it should be expanded to all health care professions</p> <p><input type="checkbox"/> Yes, it should be expanded to some but not all health care professions</p> <p><input type="checkbox"/> No, it should not be expanded</p> <p><input type="checkbox"/> I am unfamiliar with the National Practitioner Data Bank → <i>SKIP to Section J on page 21</i></p> <p>I2. Have you been reported to the NPDB or the HIPDB?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No → <i>SKIP to Question I5</i></p> <p>I3. Who submitted the report(s)? <i>Mark all that apply.</i></p> <p><input type="checkbox"/> State licensing board</p> <p><input type="checkbox"/> Medical malpractice payer, such as an insurance company</p> <p><input type="checkbox"/> Hospital</p> <p><input type="checkbox"/> Federal agency</p> <p><input type="checkbox"/> Unknown</p> <p><input type="checkbox"/> Other, Specify: <input type="text"/></p> <p>I4. Did the NPDB report impact your career? <i>Mark all that apply.</i></p> <p><input type="checkbox"/> Yes, the report had a negative impact on my position (e.g., reprimand, termination)</p> <p><input type="checkbox"/> Yes, the report made it difficult to obtain employment</p> <p><input type="checkbox"/> No, the report did not impact my career</p> <p>I5. When making hiring decisions, do you feel that health care employers should consider prior negative health care related actions taken against prospective employees?</p> <p><input type="checkbox"/> Yes, they should consider prior negative actions</p> <p><input type="checkbox"/> No, they should not consider prior negative actions</p> <p>I6. The NPDB collects reports on adverse actions taken against a physician that affect that physician's clinical privileges. Many nurse practitioners currently perform job functions similar to primary care physicians. Do you feel the NPDB should also collect reports on adverse actions against a nurse practitioner that could affect their clinical privileges?</p> <p><input type="checkbox"/> Yes, they should be reported</p> <p><input type="checkbox"/> No, they should not be reported</p> <p>I7. Do you think nurse practitioners who are supervised by a physician should be subject to the same reporting requirements as physicians, less strict reporting requirements, or more strict reporting requirements?</p> <p><input type="checkbox"/> The same reporting requirements as physicians</p> <p><input type="checkbox"/> Less strict reporting requirements for nurse practitioners who are supervised by a physician</p> <p><input type="checkbox"/> More strict reporting requirements for nurse practitioners who are supervised by a physician</p> <p>Continue to Section J</p>

Attachment D: Selected NSSRN screens for eye tracking

Section J. License and Certification Detail

J1. Please provide any other names under which you may have held a nursing license. If none, leave blank.

First name M.I.

Last name

First name M.I.

Last name

J2. On December 31, 2017, which of the following skill-based certifications did you have? *Mark all that apply.*

☐ No skill-based certifications

☐ Ambulatory Care Certification

☐ Critical Care Certificate

☐ Emergency Medicine/Nursing (EMT, ENPC, etc.)

☐ Life Support (BLS, ACLS, BCLS, etc.)

☐ Resuscitation (CPR, NRP, etc.)

☐ Trauma Nursing (TNCC, ATCN, ATN, etc.)

☐ Other, Specify:

J3. On December 31, 2017, did you have any active national nursing certifications as a Clinical Nurse Specialist, Nurse-Midwife, or Nurse Anesthetist?

☐ Yes

☐ No → SKIP to Section K on page 22

J4a. On December 31, 2017, did you have an active certification as a Clinical Nurse Specialist (CNS)?

☐ Yes

☐ No → SKIP to Question J5a on page 22

J4b. Was this certification required by your employer for your job?

☐ Yes

☐ No

J4c. Was this certification from a national certifying organization?

☐ Yes

☐ No

J4d. Which of the following Clinical Nurse Specialist (CNS) certifications did you have? *Mark all that apply.*

☐ Acute Care/Critical Care

☐ Adult Health

☐ Community Health/Public Health

☐ Diabetes Management

☐ Gerontological

☐ Home Health

☐ Hospice and Palliative Care

☐ Medical-Surgical

☐ Oncology

☐ Pediatric

☐ Psychiatric & Mental Health - Adult

☐ Psychiatric & Mental Health - Child/Adolescent

☐ Psychiatric & Mental Health - Family

☐ Other, Specify:

Continue on next page

Section K. General Information

The next set of questions are about your personal characteristics.

K1. Where did you live on December 31, 2017? *This information is critical for producing state/county estimates of the nursing workforce.*

City/Town

County

State (or country if not U.S.A.)

Zip

K2. Where did you live on December 31, 2016? *This information is critical for producing state/county estimates.*

☐ Same address reported in Question K1

City/Town

County

State (or country if not U.S.A.)

Zip

K3. What is your sex?

☐ Male

☐ Female

Continue to Section K

K4. What is the year of your birth?

K5. Are you of Hispanic, Latino, or Spanish origin?

☐ Yes

☐ No

K6. What is your race? *Mark all that apply.*

☐ White

☐ Black or African American

☐ Asian

☐ American Indian or Alaska Native

☐ Native Hawaiian or Other Pacific Islander

☐ Some other race

K7. What languages do you speak fluently, other than English? *Mark all that apply.*

☐ No additional languages

☐ Spanish

☐ Filipino language (Tagalog, other Filipino dialect)

☐ Chinese language (Cantonese, Mandarin, other Chinese language)

☐ Russian

☐ Korean

☐ Vietnamese

☐ American Sign Language

☐ Other language(s)

K8. What is your marital status?

☐ Married or in domestic partnership

☐ Widowed, divorced, separated

☐ Never married

K9. Have you ever served on active duty in the U.S. Armed Forces, Reserves, or National Guard? *Mark one box only.*

☐ Never served in the military

☐ Only on active duty for training in the Reserves or National Guard

☐ Now on active duty

☐ On active duty in the past, but not now

K10. Which of the following best describes the children/parents/dependents who either live at home with you or for whom you provide a significant amount of care? *Mark all that apply.*

☐ Child(ren) less than 6 years old at home

☐ Child(ren) 6 to 18 years old at home

☐ Other adults at home (e.g., parents or dependents)

☐ Others living elsewhere (e.g., children, parents or dependents)

☐ None

K11. Including employment earnings, investment earnings, and other income of all household members, what was your 2017, pre-tax annual total household income? *Mark one box only.*

☐ \$25,000 or less

☐ \$25,001 to \$35,000

☐ \$35,001 to \$50,000

☐ \$50,001 to \$75,000

☐ \$75,001 to \$100,000

☐ \$100,001 to \$150,000

☐ \$150,001 to \$200,000

☐ More than \$200,000

Continue to Section L

Section L. Name and Address Information

Use the space below to correct any errors in your name or address information. If no corrections are needed, leave this section blank.

Corrections to First Name Corrections to M.I. Corrections to Last Name

Corrections to Number and Street Address

Corrections to City/Town Corrections to State Corrections to Zip Code

Thank you for your participation.

Please return this survey in the enclosed, postage-paid envelope.

The U.S. Census Bureau is conducting the National Sample Survey of Registered Nurses on the behalf of the U.S. Department of Health and Human Services (HHS) under Title 13, United States Code, Section 805, which allows the Census Bureau to conduct surveys on behalf of other agencies. Public Service Act 42 U.S.C. Section 294a(b)(2)(A) and Title 42 U.S.C. Section 294a(a)-(b) allow HHS to collect information for the purpose of understanding the nursing workforce in the United States. Federal law protects your privacy and keeps your answers confidential under 13 U.S.C. Section 9. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data. All access to Title 13 data from this survey is restricted to Census Bureau employees and those holding Census Bureau Special Sworn Status pursuant to 13 U.S.C. Section 22(c) as identified in SOEN Census-3 Demographic Survey Collection (Census Bureau Sampling Frame). Any information you provide will be shared among a limited number of Census Bureau and HHS staff only for work-related purposes identified above and as permitted under the Privacy Act of 1974 (5 U.S.C. Section 552a). Participation in this survey is voluntary and there are no penalties for refusing to answer questions. However, your cooperation in obtaining this much needed information is extremely important in order to ensure complete and accurate results.