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SURVEY METHOD

2023 HAWAII NURSING
WORKFORCE SUPPLY

2023 Hawai'i Nursing Workforce Supply

Survey Method

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The Hawai'i State Center for Nursing monitors the state of the nursing workforce in Hawai'i through the collection and reporting of workforce supply, education capacity, and employer demand data. These three research activities assist entities in the public and private sectors with the development and implementation of initiatives intended to develop a robust nursing workforce that meets the needs of Hawai'i's residents now and in the future.

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INTRODUCTION

This document provides a description of the method of the Hawai'i State Center for Nursing's (the Center's) 2023 Nursing Workforce Supply Survey (Supply Survey). Questions about the content of this document or the Supply Survey should be emailed to hscndata@hawaii.edu.

INSTRUMENTATION

The Supply Survey is based on the National Forum of State Nursing Workforce Centers (2016) Minimum Dataset for Supply (Supply MDS). The Supply MDS provides guidance about the data that states should collect about their nursing workforces. The MDS includes variables that are necessary for statistical modeling of nursing workforce projections and allows states to compare the characteristics of their workforces to national nursing workforce data.

In addition to the Supply MDS variables, the Center's Supply Survey instrument includes items recommended by statewide stakeholders and the Center's Research Steering Committee. The additional variables (e.g., wellbeing and lifelong learning) were included to monitor important workforce characteristics or collect data in response to changes in the workforce or the nursing profession in Hawai'i.

The 2023 Supply Survey instrument comprised 115 questions, however, there was no circumstance under which any respondent saw every question on the survey. The use of skip logic prevented nurses from seeing questions that were irrelevant to them (e.g., nurses who were not

working in a license relevant role were not asked questions related to their nursing practice).

To establish and maintain a historical time series of data, the Center's goal is to keep the survey as similar as possible between fielding years. To that end, the major content of the survey has not changed in at least the last four survey cycles. Questions on the survey ask nurses to provide information related to their licensure, certification(s), demographic characteristics, nursing education, volunteerism, employment status, primary and secondary employment characteristics, job satisfaction and intention to leave the workforce, and nursing professional development. There were only two notable changes between the 2021 and 2023 instruments. First, a module of questions related to the employment and emotional effects of working during the COVID-19 pandemic was removed from the survey. Second, a module containing questions related to nursing wellbeing was refined after being initially piloted in 2021. Other changes were editorial in nature and did not change the substance of the survey. The full 2023 Hawai'i Nursing Workforce Supply Survey instrument is [available by clicking this link](#) or by emailing hscndata@hawaii.edu.

FIELDING

The Center conducts the Supply Survey in each odd-numbered year during the biennial nurse license renewal period with the support of the Hawai'i Board of Nursing (HBON) and the technical assistance of the Professional and Vocational Licensing (PVL) Division of the

Hawai'i Department of Commerce and Consumer Affairs (DCCA).

During the license renewal period, which in 2023 started on April 17 and ended on June 30, nurses logged on to their online license management account to submit their application for renewal. Included in the online form for license renewal was a link to the Supply Survey, which was programmed into the online survey platform, Survey Monkey.

The staff at PVL ensured that the survey was easily accessible and that nurses had access to the survey before and after they completed their license renewal so they could take the survey when it was convenient for them. The link to the Supply Survey was embedded at both the start and the end of the online license renewal page. Additionally, after the submission of payment information for license fees and completing the license application process, the Supply Survey automatically opened in a new browser tab or window. Finally, the link to the survey was included on the electronic receipt that all nurses received by email after paying their license renewal fees online.

In addition to the work done by PVL to ensure nurses had easy access to the Supply Survey link, many employers posted a flyer with a QR code to the survey at their facilities and encouraged their nurses to complete it.

SAMPLE

All nurses who renewed a Hawai'i nursing license during the regular license renewal period were eligible to participate in the Supply Survey. All nurses who used the online license renewal

application form received the link to the survey as described above and self-selected to participate on a volunteer basis. PVL estimates that about 39,550 nurses were eligible to renew a nursing license in 2023. Of these, 31,795 applied for license renewal between April 17 and June 30. The number of nurses who renewed a license is the population represented by the survey results and is the denominator in the calculation of the study response rate.

DATA CLEANING

The raw data file contained 15,771 records. Prior to analysis, blank and duplicate records were identified and removed from the data file. Blank records were those records in which the respondent did not indicate holding one or more active Hawai'i nursing licenses. The license question was the first question on the survey and respondents were unable to proceed beyond that question without answering it. As such, any record without license data was necessarily blank. A total of 96 records contained no license data and were removed from the data file. The resulting data file contained 15,675 records.

Cases were identified as probable duplicates if they had identical values in the alphanumeric variable created by concatenating the last five digits of the respondent's primary phone number and the respondent's birth year. In total, 255 surveys were identified as probable duplicates. In all cases in which multiple records were associated with the same phone digits + birth year combination, the survey with the latest completion date was retained in the data file and all other surveys were discarded. The rationale for

retaining a respondent’s last survey rather than their first survey was that a person would have been unlikely to complete a 12-minute survey more than once unless their first attempt was incomplete or if they wanted to change one or more responses after the submission of their initial survey.

The removal of 255 probable duplicate records resulted in the retention of 15,420 records which comprised the final data file. This resulted in an overall study response rate of 48%. The dataset for the 2023 Nursing Workforce Supply Survey had the largest number of unique records and the highest overall response rate of any year in the study’s history.

Table 1: Response Rates and Margins of Error by License

| | All Nurses | LPN | RN | APRN |
|---|------------|----------|----------|----------|
| Renewed a License in 2023 | 31,795 | 1,658 | 27,836 | 2,301 |
| Completed 2023 Supply Survey | 15,409 | 871 | 13,422 | 1,116 |
| Response Rate | 48.4% | 52.5% | 48.2% | 48.5% |
| Margin of Error ($\alpha=95\%$) | +/- < 1.0% | +/- 2.0% | +/- 1.0% | +/- 2.0% |

Note. Completions by license were counted after the removal of blank and duplicate records from the dataset.

CRITERIA FOR CLASSIFICATION OF CASES INTO LICENSE CATEGORIES

Prior to analysis, each data record was classified into one and only one nurse license category according to the following rules:

1. Any respondent who reported holding only an LPN license *or* only an RN license was classified into the license category corresponding to the license they reported holding.
2. Any respondent who reported holding both an LPN license *and* an RN license but *not* an APRN license was classified as an RN.
3. Any respondent who reported holding an APRN license *and* an RN license but *no* APRN certification was classified as an RN as it is impossible to hold an APRN license without an APRN certification.
4. Any respondent who indicated holding an APRN license *and* an RN license *and* at least

one APRN certification was classified as an APRN.

CRITERIA FOR INCLUSION OF CASES IN ANALYSIS

All nurses who renewed a Hawai‘i nursing license were encouraged to complete the Supply Survey. However, the primary goal of the survey is to describe the characteristics of nurses who practice in Hawai‘i. As such, most of the analysis, except where explicitly noted, were run on a subset of the dataset that included only those nurses who reported that they were working in a license-relevant role in Hawai‘i.

Records were included in the subset of data used for the analysis of the Hawai‘i nursing workforce if they met four criteria. Records that did not meet the criteria were retained in the dataset but filtered out of most analyses.

Cases were filtered out of the dataset if:

1. The respondent indicated that they were an APRN who did *not* also have an active RN license *and* APRN certification (n=11; cumulative cases excluded from analysis=11). A person cannot hold an APRN license in Hawai'i without both an active RN license and a valid APRN certification so these cases lack valid license data. Because they are invalid cases, they were removed from the dataset and are not included in any table, report, or infographic.
2. The respondent indicated that they were not employed or self-employed at the time of the survey (n=1,104) or did not answer the question related to employment status (n=778; cumulative cases excluded from analysis=1,893).
3. The respondent indicated that they were not employed or self-employed in any position that is relevant to their nursing license (n=276) or did not answer the question about the relevance of their nursing license to their employment (n=16; cumulative cases excluded from analysis=2,185).
4. The respondent indicated that their primary employment position is located outside the state of Hawai'i (n=4,751) or did not answer the question about the location of their primary employment (n=109; cumulative cases excluded from analysis=7,045). Note that respondents' residential location was not used to determine whether they are part of the Hawai'i nursing workforce so that travel nurses working in the state temporarily would be included in analysis.

Records are excluded from analysis on a case wise basis if the record was missing data in one or more variables included in a given analysis. No attempt was made to interpolate or otherwise estimate missing values.

Table 2. Estimation of Population of Nurses Employed in Hawai'i by License

| | All Nurses | LPN | RN | APRN |
|---|------------|-------|--------|-------|
| Active, In-State Licenses Reported by PVL | 19,134 | 1,236 | 16,454 | 1,444 |
| % of Hawai'i Resident Nurses Not Working in a Nursing License-Relevant Role | 11.5% | 13.9% | 11.6% | 8.6% |
| Estimated Count of Hawai'i Resident Nurses Working in a Nursing License-Relevant Role (to the nearest 5) | 16,930 | 1,065 | 14,545 | 1,320 |

ESTIMATION OF COUNTS

Some of the data tables produced from the 2023 Supply Survey data include frequency distributions or cross-tabulations that include both

percentages and counts. Counts are calculated estimates of the number of nurses in the workforce that the corresponding percentage represents.

Estimated counts were calculated as a two-step process. First, the number of nurses employed in a nursing role in Hawai'i was estimated by multiplying the number of nurses with active licenses who reside in Hawai'i as reported in PVL's (2023) [Geographic Report of Current Licenses](#) by the percentage of survey respondents who reported

on the Supply Survey that they reside in Hawai'i and were employed in a license relevant role. Then, estimated counts for each variable were computed by multiplying the calculated percentages in each response category by the estimated population of nurses employed in Hawai'i.

REFERENCES

- National Forum of State Nursing Workforce Centers. (2016). *National Nursing Workforce Minimum Datasets: Supply*. https://nursingworkforcecenters.org/wp-content/uploads/2021/11/National-Forum-Supply-Minimum-Dataset_September-2016-1.pdf
- Professional and Vocational Licensing Division. (2023). *Geographic Report (Current Licenses) as of September 14, 2023*. <https://cca.hawaii.gov/pvl/files/2021/10/WebGEO-RptHoala-092421.pdf>