Hawai'i State Nurse Education Capacity Report
2016-2017

WORKFORCE
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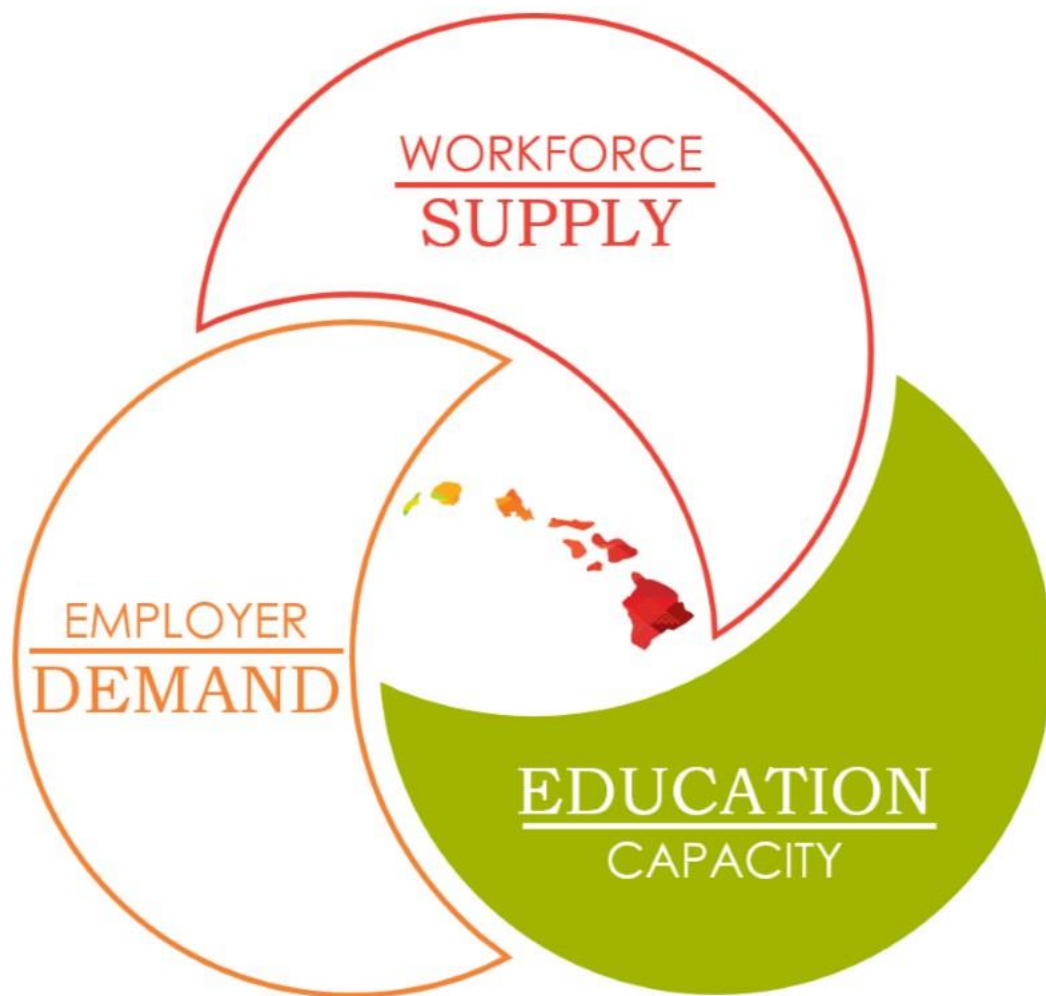
HAWAI'I STATE CENTER FOR **NURSING**
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Hawai'i State Nurse Education Capacity Report
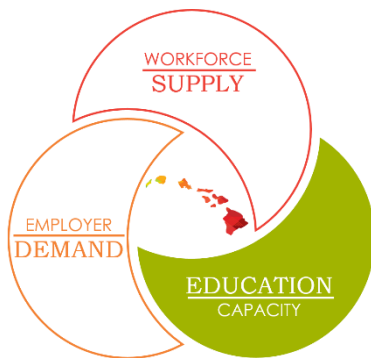
Academic Year 2016-2017

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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, educational 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.

The educational capacity report summarizes the state of nurse education in Hawai'i, including current capacity and barriers to sustainability and growth.

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Executive Summary

The 2016-2017 Hawaiʻi State Nurse Education Capacity Report summarizes the findings from a survey of 10 in-state schools of nursing that offer certificate and degree programs that prepare prospective nurses for entry to practice as LPNs, RNs, and APRNs. Additionally, the schools offer several post-license pathways to higher education in nursing. These pathways provide the education necessary for licensed nurses to increase their scope of practice, to practice as independent healthcare providers, or assume careers as nurse faculty.

Hawaiʻi's schools of nursing play a pivotal role in ensuring the sustainability of the nursing workforce. Among nurses currently employed in Hawaiʻi, 55% received their initial educational preparation for nursing from an in-state program. Hawaiʻi's schools of nursing work to keep the prospective nursing workforce here at home by offering educational preparation for all levels of practice, distance education opportunities, and efficient pathways to higher education. As Baby Boomer nurses retire and healthcare utilization increases due to an aging population and healthcare reform, Hawaiʻi's schools of nursing are essential to maintaining the health and wellness of Hawaiʻi's residents.

The following are key highlights from the sections throughout this report:

Enrollment Demand for Nurse Education Programs

❥ Hawaiʻi's schools of nursing accepted nearly 600 applications to pre-license LPN, ADN, BSN and GEPN programs.

❥ 409 students enrolled in entry to practice RN education programs. 75% of these enrollments were to BSN programs.

❥ All types of entry to practice programs received more applications than they had available spaces for new students. Across all programs, they received an average of 2.3 applications for every available opening.

❥ The state's only GEPN program received 3.4 applications per available opening for new students. This is the highest application-to-opening ratio of all nurse education programs.

Graduates from Nurse Education Programs

❥ LPN programs graduated 25 students who were eligible to take the NCLEX-PN.

❥ RN programs graduated 275 students who were eligible to take the NCLEX-RN.

❥ The GEPN program graduated 25 students who passed the NCLEX-RN and completed MS, DNP, or PhD degrees.

❥ Post-license programs graduated 110 nurses who completed a degree higher than the one that prepared them for initial entry into practice. Of these 61% were post-license BSN graduates, 19% were MS graduates, 14% were DNP graduates, and 6% were PhD graduates.

Nursing Student Demographic Characteristics

❧ 20% of students enrolled in pre-license nurse education programs were men. This is 7 percentage points higher than the proportion of men among currently employed nurses in the state.

❧ 64% of students enrolled in pre-license BSN programs were age 25 or younger.

❧ 65% of students enrolled in GEPN programs were between the ages of 26 and 50.

❧ Students of Native Hawaiian ancestry accounted for approximately 15% each of the enrollment in post-license BSN, MS, and PhD programs.

❧ Caucasian students accounted for the largest proportions of students enrolled in DNP (35%) and PhD (64%) programs.

Nurse Faculty

❧ Hawai'i's nurse faculty vacancy rate, defined as the number of funded faculty positions for which candidates were being actively recruited, was 7%. The national vacancy rate is 8%.

❧ 60% of schools reported that the optimal number of faculty they need to achieve desired program sustainability and growth exceeds the number of positions for which they have funding.

❧ 40% of Hawai'i's nurse faculty are age 56 or older and within 6 years of the average age at the time of retirement (62.5 years).

Challenges Faced by Hawai'i's Schools of Nursing

❧ 56% of Hawai'i's schools of nursing have difficulty securing sites for their students' clinical placement experiences.

❧ 33% of schools indicate having difficulty finding preceptors for clinical placements.

❧ 44% report that they lack sufficient funding for new hires or program development.

❧ To mitigate the negative effects facing their programs, 63% of schools report that they have reduced cohort sizes and 25% report that they have raised student tuition and/or fees.

❧ The capacity of our in-state schools of nursing to accept, enroll, and graduate an adequate number of nursing students will be a critical factor in the ability of the nursing workforce to meet projected demand for nurses.

Introduction to the 2016-2017 Educational Capacity Report

Study Background

The Hawaiʻi State Department of Labor and Industrial Relations (DLIR, 2018) estimates that by 2024, nearly 14,500 nurses[1] will be employed in Hawaiʻi. This represents a 14% increase in the number of nurses working in Hawaiʻi as compared to 2014. As the majority of working nurses are educated in local nurse education programs (Hawaiʻi State Center for Nursing, 2017a), our schools of nursing must ensure that they have adequate capacity to accept, enroll, and graduate an adequate number of nursing students to support projected job growth.

Because our local schools of nursing supply the majority of the nurses who work in Hawaiʻi, the Hawaiʻi State Center for Nursing (hereafter referred to as the Center) conducts an annual educational capacity survey to describe the state of nurse education. The intention of the survey is to assess enrollment capacity and graduation rates, nursing student demographic characteristics, the size and characteristics of the nurse faculty workforce, and challenges faced by the state's nurse education programs. This report is intended to serve as a tool to assist stakeholders in academia, healthcare industry, and government in addressing nursing workforce development.

The educational capacity survey is based on the minimum data set recommended by the National Forum of State Nursing Workforce Centers (hereafter referred to as the Forum) (2009). The Forum's research committee collaboratively develops recommended survey questions for educational capacity, supply, and demand surveys for use by nursing workforce centers across the country. The Forum's goal is to support the collection and reporting of nursing workforce data at the national level by providing individual states with guidance on survey methodology and a common set of questions that, when used, allow valid comparisons of data from different states.

Important Notes and Study Limitations

Though the Center has adopted the recommended methodology for nurse education capacity surveys, the findings should be interpreted with the following five factors in mind:

First, though the focus of this report is on nurse education as a requirement for nurse licensure and practice, it is important to note that the completion of the minimum nurse education is *one* of the requirements a prospective nurse must meet prior to applying for a nursing license. To be eligible for licensure, prospective nurses must meet *all* statutory requirements which include but are not limited to passing the appropriate national board (NCLEX) exam and any certifying exams necessary for their desired level of practice (see Hawaiʻi Revised Statues §457-8.5 for certification requirements for advanced practice registered nurse (APRN) licensure). Only when a prospective nurse can demonstrate that he or she has met all of the statutory requirements for licensure *and* has been issued a license by the Hawaiʻi Board of Nursing (HBON), is that nurse entitled to use the title of LPN, RN, or APRN. As the Center is not a regulatory entity, this report is *not* intended to serve nor

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[1] Includes licensed practical nurses (LPNs), registered nurses (RNs), nurse practitioners (NPs), and post-secondary nurse educators.

should it be interpreted as a comprehensive review of requirements for licensure.

Second, the Center conducts educational capacity surveys following the completion of an academic year. The data, therefore, are retrospective and provide information about the state of nurse education in Hawai'i approximately one calendar year prior to the publication of the report. The current report includes data collected during February and March of 2018 about the 2016-2017 academic year (AY 2016-2017). The survey focuses only on the state of nurse education during the academic year and does not collect data related to enrollment projections or the anticipated development of new degree programs or pathways.

Third, this report summarizes data provided by 10 academic institutions offering nurse education programs recognized by HBON, have a physical campus in Hawai'i, and that offer at least one face-to-face nurse education program in the state. The survey does not include out-of-state schools that offer nurse education to Hawai'i residents exclusively through distance learning programs. Though distance-only programs are excluded from the survey, it is important to note that reported results do include the distance

education programs offered by Hawai'i's schools of nursing. Distance learning offered by in-state schools increase access to nurse education to all Hawai'i residents regardless of island of residence.

Fourth, all 10 in-state institutions submitted responses to the educational capacity survey though not all schools provided all requested data points. Missing data points were extrapolated whenever possible, but some missing data points were inestimable. In most cases of data extrapolation, the estimates are of the lowest possible value. As a result, the data reported here are, in most cases, an underestimate of statewide nursing student application, enrollment, graduation, and census data. Tables presenting counts that include missing or estimated data are notated with superscripted "ue" to indicate that the figure is an underestimate.

Finally, the Center did not collect educational capacity data for three academic years: 2013-2014, 2014-2015, and 2015-2016. Rather than inserting blank data fields as placeholders for missing years in tables and graphs, they are eliminated entirely to improve the readability of data displays. The reader should take care to note the missing academic years especially when interpreting graphs of data tracked over time.

Nurse Education Programs

Table 1. Nurse Education Programs Offered in Hawai'i during Academic Year 2016-2017

Term	Definition
Pre-license Programs	**Nurse education programs that admit students with no prior education or experience in nursing.**
LPN Program	A program of instruction that requires at least one year of full-time equivalent coursework generally within a high school, vocational/technical school, or community/junior college setting, the completion of which results in a diploma or certificate of completion and eligibility to apply for licensure as an LPN (see also Hawai'i Administrative Rules §16-89-11 and §16-89-12).
ADN Program, Generic/Traditional	A program of instruction that requires at least two years of full-time equivalent college academic work generally within a junior or community college, the completion of which results in an associate degree with a major in nursing and eligibility to apply for licensure as an RN. (See also Hawai'i Administrative Rules §16-89-10).
ADN Program, Bridge	A pre-licensure RN associate degree program with a curriculum sequence for students having some formal training in nursing or a related field. Bridge programs typically accelerate the degree completion for students who are licensed as an LPN or paramedic, for example. Completion results in an associate degree with a major in nursing and eligibility to apply for licensure as an RN. (See also Hawai'i Administrative Rules §16-89-10).
Pre-License BSN Program, Generic/Traditional*	A program of instruction to prepare *generalist* registered nurses that admits students with no previously nursing education, the completion of which results in a baccalaureate degree (e.g. BS, BSN, etc.) with a major in nursing and eligibility to apply for licensure as an RN. The program requires at least four years but not more than five years of full-time equivalent college course work within a senior college or university. (See also Hawai'i Administrative Rules §16-89-10).
Pre-License *Graduate* Entry (*GEPN*) Program*	A program of instruction that admits baccalaureate degrees in other disciplines and no previous nursing education. The program prepares graduates for entry into the profession, eligibility to apply for licensure as an RN, and upon completion, *awards a graduate degree in nursing (e.g., MS, DNP, PhD)*. (See also Hawai'i Administrative Rules §16-89-10).
Post-license Programs	**Nurse education programs that require a prospective student to hold to be eligible for admission.**
*LPN to BSN Program**	*A program for students licensed as LPNs the completion of which results in a baccalaureate degree (e.g., BS, BSN, etc.) with a major in nursing and eligibility to apply for licensure as an RN.*
Post-License BSN (RN to BSN) Program	A program for students who are already licensed as RNs whose highest nursing education is a diploma or associate's degree.
MS Program *	A post-license master's program with emphasis on advanced clinical practice, including Nurse Practitioner, Nurse Anesthetist, Nurse Midwifery, and Clinical Nurse Specialist tracks. *Includes RN to MS and post-baccalaureate admissions pathways.*
DNP Program*	A program of instruction that prepares graduates for the highest level of nursing practice beyond the initial preparation in the discipline. The doctor of nursing practice degree is the terminal practice degree. *Includes post-baccalaureate and post-master admissions pathways.*
PhD Program*	A post-licensure doctoral program that culminates in the Doctor of Philosophy in Nursing. *Includes post-baccalaureate and post-master admissions pathways.*

Note. *Italicized program titles, definitions, or parts of definitions are additions or modifications to those published in the source document published by the National Forum of State Nursing Workforce Centers (2009, pp. 7-9).

Education Requirements for Nurse Licensure

Individuals are legally permitted to practice nursing only when issued a valid license by HBON. License eligibility is contingent on applicants' ability to demonstrate that they meet all of the criteria for nurse licensure as specified in Hawai'i Revised Statutes Chapter 457 and Hawai'i Administrative Rules Title 16, Chapter 89. One of the required components of an application for nurse licensure is proof of the completion of the minimum nurse education program required for a specific license. The minimum education required for nurse licensure increases in conjunction with the increase in the scope of practice legally permitted by each license. Table 1 provides the definition of each type of nurse education program and the level of nursing practice for which each program prepares a student.

Education Requirements for Entry to Practice

A prospective nurse must complete a nurse education program that provides preparation for initial entry to practice. Such programs accept prospective nurses with no prior education in nursing. As such, they provide the foundational didactic and clinical education required for the development of novice level practice competency and the knowledge necessary to pass the national NCLEX-PN or NCLEX-RN examination for licensure for LPNs or RNs respectively. LPNs are prepared in LPN certificate programs and RNs are prepared in associate degree in nursing (ADN) programs or pre-license/traditional bachelor's degree in nursing (BSN) programs.[2] Nurses may also enter nursing practice as APRNs following the completion of a graduate-entry to nursing practice

(GEPN) program. GEPN programs prepare prospective APRNs to pass the NCLEX-RN and to pass the national certifying exam relevant to a prospective APRN's intended area of practice (e.g., nurse practitioner, certified nurse midwife, certified registered nurse anesthetist, or certified nurse specialist).

Education Requirements for Advanced Practice

The APRN license provides the most expansive and comprehensive scope of practice. Hawai'i adheres to the Consensus Model of APRN regulation. As such, APRNs are granted full scope of practice authority which includes prescriptive authority and the ability to practice as independent healthcare providers. Eligibility for APRN licensure requires a person to hold an active RN license, complete a graduate nurse education program (MS or DNP) from an accredited school of nursing, and pass a national certifying examination relevant to their practice area. Graduate nurse education provides a combination of didactic and clinical instruction with emphasis on health promotion, assessment, diagnosis, and comprehensive care management including pharmacotherapy and non-pharmacologic interventions.

Pathways to Academic Progression in Nursing

The Institute of Medicine (2011) recommended that the national nursing workforce should be more highly educated and reported evidence indicating that higher education in nursing yields more positive patient outcomes. In particular, IOM recommended that by the year 2020, 80% of the

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[2] A prospective RN may also obtain the necessary education for licensure through an RN diploma program though none exist in Hawai'i.

nursing workforce should have a baccalaureate degree or higher, and that the doctoral-prepared nursing workforce should double. Nurses pursue academic progression though post-license nurse education programs which allow licensed nurses the opportunity to advance their nurse education through curricula that build on their prior education and clinical experience.

Academic Pathways to BSN Education

Hawai'i's RNs have the opportunity to pursue baccalaureate education through the availability of post-license RN-to-BSN programs which provide baccalaureate education to RNs who were initially prepared in diploma or ADN programs. Additionally, the LPN-to-RN pathway provides LPNs the opportunity to pursue higher education in nursing that will allow them to enter RN practice with baccalaureate education.

Academic Pathways to Graduate Nurse Education

Graduate nurse education programs build on RNs' existing education and experiential knowledge to provide higher education that prepares them to ascend the clinical ladder, become advanced practitioners, or shift into non-clinical roles as executives, administrators, educators, or researchers.

To improve RNs' access to graduate nurse education, there exist a number of academic progression pathways to higher education that eliminate the need to complete all of the degrees between the ADN and DNP or PhD. Programs such as the RN-to-MS or BSN-to-DNP have long-standing precedent in other healthcare disciplines such as medicine, pharmacy, and physical therapy whereby students enter doctoral level programs directly after the completion of a baccalaureate degree. Expedited pathways to post-license graduate nurse education promote the completion of higher education in nursing by reducing the amount of time, number of courses, and potentially the financial cost associated with completing higher nursing degrees.

Figure 1. Pathways to Nurse Education in Hawai'i, AY 2016-2017

Pre-License Programs
Post-License Programs

LPN Certificate (2)

Post-License BSN Programs

LPN to BSN (1)

RN to BSN (4)

ADN Programs
ADN (4)
ADN-Bridge (1)

Traditional BSN (4)

MS Programs
RN to MS (2)
Post-Bacc MS (2)

Doctoral Degree Programs

DNP Programs
BSN to DNP (2)
Post-Master DNP (2)

PhD Programs
BSN to PhD (1)
Post-Master PhD (1)

GEPN

GEPN MSN

GEPN DNP

GEPN PhD
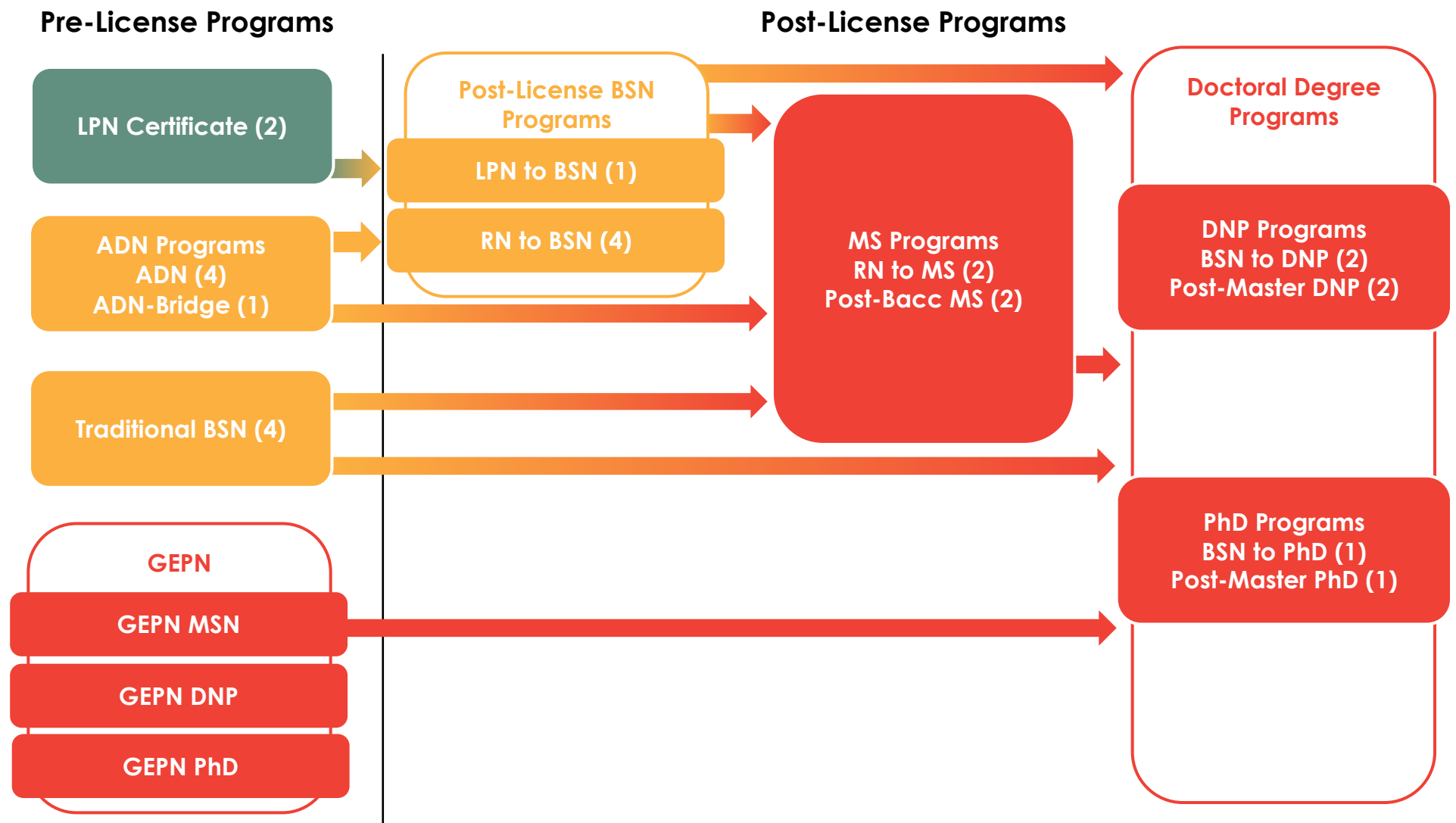
Note. Green boxes indicate certificate programs. Yellow boxes indicate undergraduate degree programs. Red boxes indicate graduate degree programs. Numbers in parentheses indicate the number of programs of each type in existence in Hawai'i during AY 2016-2017.

Hawaiʻi's Schools of Nursing

In Hawaiʻi, 10 post-secondary institutions offer nurse education through nursing schools, departments, or programs. [3] All 10 of Hawaiʻi's schools of nursing are accredited or pursuing accreditation by the Commission on Collegiate Nursing Education (CCNE) or the Commission for Nursing Education Accreditation (CNEA). All in-state schools of nursing are recognized by HBON as providing nurse education that meets the standards for nurse licensure in the state of Hawaiʻi.

Collectively, Hawaiʻi's schools of nursing award six types of nursing certificates or degrees and prepare students for all levels of nursing practice. Prospective nursing students may select to apply to 13 different types of nurse education programs including five types of entry-to-practice programs (LPN, ADN, ADN-Bridge, BSN, and GEPN), two types of undergraduate post-license programs (LPN-to-RN and RN-to-BSN), and three types of post-license graduate programs which include three traditional and three expedited admissions pathways (RN-to-MS, traditional MS, BSN-to-DNP, traditional DNP, BSN-to-PhD, and traditional PhD).

Appendices C and D provide a detailed accounting of which schools of nursing offered each type of program in AY 2016-2017 and the semesters during the academic year in which each school offered admissions.

Table 2. Federal Tax Classification and Nursing Certificates/Degrees Offered by Institution, AY 2016-2017

Name	Federal Tax Classification			Nursing Certificates/Degrees Offered					
	Public	Not for Profit	For Profit	LPN	ADN	BSN	MS	DNP	PhD
Number of Institutions (State)	**6**	**2**	**2**	**2**	**4**	**6**	**2**	**2**	**1**
County of Hawaiʻi									
Hawaiʻi Community College	✓			✓	✓				
University of Hawaiʻi at Hilo	✓					✓		✓	
City & County of Honolulu									
Argosy University			✓			✓			
Chaminade University		✓				✓			
Hawaiʻi Pacific University		✓				✓	✓		
Kapiʻolani Community College	✓			✓	✓				
University of Hawaiʻi at Mānoa	✓					✓	✓	✓	✓
University of Phoenix[4]			✓			✓			
Maui County									
Maui College	✓				✓				
County of Kauaʻi									
Kauaʻi Community College	✓				✓				

Note. All institutions with a federal tax classification of "Public" are institutions governed by the University of Hawaiʻi System.

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[3] Throughout this report, the term "school(s) of nursing" will refer to any academic unit (i.e., school, department, or program) that offers nurse education.
[4] The University of Phoenix (UoP) responded to the survey but provided no data as they have not enrolled any new students since 2015. Their existing LPN-to-BSN cohorts will complete their programs by 2019 after which the program will terminate. None of the numerical estimates or program descriptions contained in this report account for UoP's program.

Nurse Education Capacity in Hawai'i

Pre-License Programs

In AY 2016-2017, Hawai'i's pre-license nurse education programs accepted nearly 600 students and enrolled nearly 490 students to LPN, ADN, pre-license BSN, and GEPN programs (see Table 3). These students, upon their graduation, will enter the workforce in waves over the next 4 years at all levels of nursing practice. Across all programs, enrollment demand, measured as total qualified applications, exceeded seats available for new students. On average, Hawai'i's pre-license programs received 2.3 times as many applications as they had openings for new students.

Hawai'i's schools of nursing graduated a total of 275[ue] new nurses in AY 2016-2017. Of these, 9% completed LPN programs, 82% completed undergraduate RNs programs, and 9% completed graduate entry programs, many of which will be eligible for licensure as APRNs. In contrast to the employed nursing workforce in 2017, Hawai'i's schools of nursing produced proportionally slightly fewer RN-eligible graduates and slightly more LPN- and APRN-eligible graduates. [5] The addition of more LPNs and APRNs to the workforce may help to address what employers report are currently the most significant areas of employment demand. Specifically, long-term care facilities report difficulty finding LPNs, and many parts of Hawai'i have been identified as being affected by a primary care provider shortage which APRNs can help to address.

Table 3. Capacity, Enrollment, and Graduation Counts for Pre-Licensure Nursing Programs, AY 2016-2017

	LPN	ADN[*]	BSN	GEPN
Available Seats	28	150	321	50
Qualified Applicants	58[ue]	362[ue]	436[ue]	170
Admissions Offered	28	126[ue]	372	68
Acceptance Rate	38%	28%	79%	40%
New Students Enrolled	28[ue]	106[ue]	303	50
Program Graduates[**]	25	57[ue]	168[ue]	25

Note. [*]Includes traditional ADN and ADN-Bridge programs. [**]Represents the number of students who graduated during AY 2016-2017. These students were admitted in prior years and are not part of the capacity, applicant, or enrollment counts for AY 2016-2017.

The IOM (2011) recommends that the nationwide nursing workforce become more demographically representative of the population to increase patients' access to culturally competent care. Because the demographic composition of students in pre-license nurse education programs will eventually influence that of the employed nursing workforce, it is valuable to monitor the nursing student population for ethnic representativeness.

Available demographic data[6] indicate that men account for an average of 20% of the student census in each of the four types of pre-license nurse education programs. In contrast, men account for 13% of the employed nursing workforce in Hawai'i (Hawai'i State Center for Nursing, 2017a). The enrollment of a notably larger proportion of men in nurse education programs than in the workforce may bode well for a

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[5] In 2017, the employed nursing workforce was 8% LPN, 86% RN, and 6% APRN (Hawai'i State Center for Nursing, 2017a).
[6] All LPN and most ADN programs provided only the gender distribution of their enrolled students. Pre-license BSN and GEPN programs' data were

more complete though completeness varied by institution and demographic variable.

shift toward increased representation of men among employed nurses in coming years.

The reported ethnic composition of BSN and GEPN students varies significantly from the existing nursing workforce and the U.S. Census Bureau's statewide population data. Substantial differences between data sources means either that the ethnic composition of nursing students is substantially different from that of both the state's population and employed nurses or that each data source used different methods of classifying individuals into ethnic categories. Because it is not clear whether differences in the ethnic composition of nurses is real or a measurement artifact, the Center hesitates to draw conclusions about possible impact of the representativeness of pre-license nursing students on the future nursing workforce.

Table 4. Demographic Characteristics of Pre-License Nursing Students, AY 2016-2017

| Demographic Characteristic	LPN		ADN		BSN		GEPN	
	#	%	#	%	#	%	#	%
Gender Total	**28**	**100%**	**159[ue]**	**100%**	**710[ue]**	**100%**	**143**	**100%**
Female	21	75%	124	78%	573	81%	117	82%
Male	6	21%	35	22%	136	19%	26	18%
Unknown/Missing	1	4%	0	0%	1	<1%	0	0%
Race/Ethnicity Total	**28**	**100%**	**159[ue]**	**100%**	**710[ue]**	**100%**	**143**	**100%**
White	--		9	6%	94	13%	24	17%
Black/African American	--		0	0%	10	1%	6	4%
Hispanic	--		1	<1%	30	4%	10	7%
Chinese	--		0	0%	12	2%	5	3%
Filipino	--		9	6%	58	8%	21	15%
Japanese	--		0	0%	23	3%	17	12%
Korean	--		0	0%	2	<1%	2	1%
Other Asian	--		0	0%	194	27%	6	4%
Native Hawaiian	--		2	1%	95	13%	19	13%
Samoan	--		0	0%	1	<1%	0	0%
Other Pacific Islander	--		0	0%	2	<1%	3	2%
American Indian/Alaska Native	--		2	1%	5	1%	4	3%
Multiracial	--		2	1%	164	23%	22	15%
Other Ethnicity	--		0	0%	0	0%	0	0%
Unknown/Missing	--		135	85%	20	3%	4	3%
Age Total	**28**	**100%**	**159[ue]**	**100%**	**710[ue]**	**100%**	**143**	**100%**
20 Years or Younger	--		0	0%	142	20%	0	0%
21 Years to 25 Years	--		29	18%	314	44%	42	29%
26 Years to 30 Years	--		13	8%	122	17%	57	40%
31 Years to 40 Years	--		24	15%	81	11%	36	25%
41 Years to 50 Years	--		10	6%	26	4%	7	5%
51 Years to 60 Years	--		1	1%	1	0%	1	1%
61 Years and Older	--		0	0%	0	0%	0	0%
Unknown/Missing	--		82	52%	24	3%	0	0%

Note. Dashes in the count column indicates that data were not reported by any school with the indicated program. The corresponding percentage column is blank as the value is not computable.

LPN Programs

In AY 2016-2017, two schools of nursing offered LPN education programs. The programs received 2.1 more applications than they had seats available for new students. Of the 28 students who enrolled in LPN programs in AY 2016-2017, 25 (89%) completed the one-year program and became eligible to take the NCLEX-PN.

The number of LPN applications, enrollments, and graduations follow a similar pattern of increase and decrease as the LPN license counts reported by HBON since 2005 (Hawai'i State Center for Nursing, 2017a). The decrease in the number of licensed LPNs does not appear to be due to a lack of interest as programs have received an average of double the applications as they had open seats over the last 12 years. Enrollment capacity, however, has ranged from a high of 81 to a low of 10 over that same period of time. Fluctuations in capacity have likely contributed to similar pattern of change in the number of LPNs licensed in the state.

Figure 2. Applicants, Enrollees, & Graduates for LPN Programs, 2004-2017
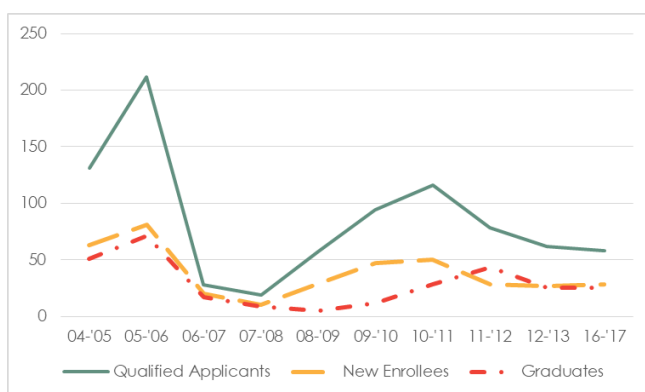
It is important to identify what resources Hawai'i's programs need to ensure ongoing capacity to build the LPN workforce. This is an especially urgent concern as 2017 license data from HBON indicates that the LPN workforce in Hawai'i has decreased by

16% over the last 12 years (Hawai'i State Center for Nursing, 2017a) and has impacted availability of critical staffing resources, especially in long-term care.

ADN & BSN Programs

ADN and pre-license BSN programs provide alternate educational pathways into initial RN practice. Both degree programs provide preparation for the NCLEX-RN examination. ADN programs emphasize clinical skills, especially for acute care settings. BSN programs emphasize critical thinking and promote nurses' ability to provide care across varying practice settings.

In AY 2016-2017, Hawai'i's BSN programs received 1.5 times as many applications as did ADN programs. Not only was demand higher for BSN programs than ADN programs last academic year, but BSN programs also had greater capacity to accept new students. BSN programs received 1.4 times as many applications as they had seats available as compared to the 2.4 applications that ADN programs received for each available opening.

In total, pre-license RN programs enrolled 409[ue] new students in AY 2016-2017 of which 26% were enrolled in ADN programs and 74% were enrolled in BSN programs. ADN and BSN programs collectively graduated 225[ue] students who were eligible to take the NCLEX-RN. Of these graduates, 25% completed ADN programs and 75% completed BSN programs.

Historically, enrollment demand for ADN and pre-license BSN programs has trended in opposite directions as they share an applicant pool and applicants choose to enroll in only one of the two types of programs. Relative program cost, especially in the context of national economic conditions, and

statewide emphasis on improving the BSN rate have contributed to shifts in enrollment demand between ADN and pre-license BSN programs.

Figure 3. Applicants, Enrollees, & Graduates for ADN Programs, 2004-2017
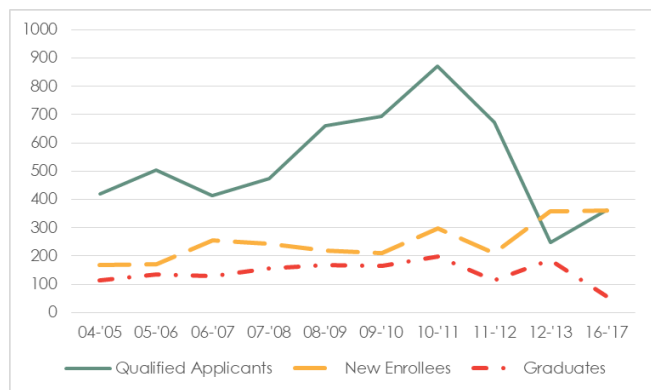
Figure 4. Applicants, Enrollees, & Graduates for Pre-License BSN Programs, 2004-2017
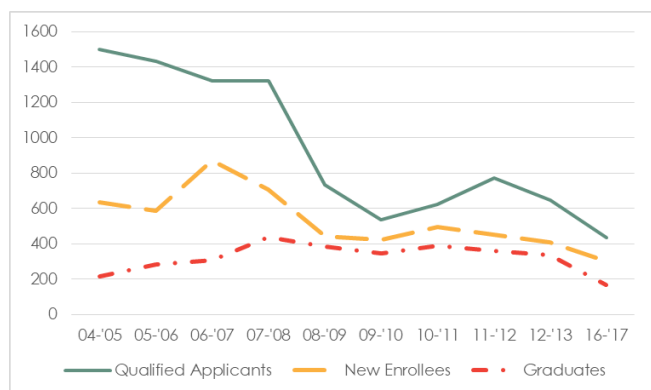
Between AYs 2004-2005 and 2007-2008, enrollment demand for BSN programs exceeded that for ADN programs by an average of nearly 950 applications per year. During the 2007-2009 national recession, the health care and education employment sectors were the only ones that experienced job growth (Bureau of Labor Statistics, 2012). Demand for relatively recession-resistant employment made nursing practice desirable as a career choice. As a result, demand for ADN programs increased while

demand for BSN programs declined beginning in AY 2008-2009. [7]

Preference for ADN programs over BSN programs continued in AYs 2010-2011 and 2011-2012 resulting in ADN programs receiving a larger proportion of all applications than BSN programs. Since the country's shift out of recession and into a period of economic growth, enrollment demand has shifted again in favor of BSN programs which have received a larger proportion of total applications to entry to practice RN programs since AY 2012-2013.

Another factor that has increased recent demand for BSN programs is a statewide initiative to increase Hawai'i's rate of BSN-prepared nurses. Efforts to increase the proportion of BSN-prepared RNs have increased the statewide BSN rate from 59% in 2013 to 72% in 2017. Though the statewide BSN-prepared RN population has increased by 22% in four years, it is important for these efforts continue to focus on the removal of barriers to BSN education programs for RNs in Maui and Kaua'i counties where less than 50% of RNs are baccalaureate prepared (Hawai'i State Center for Nursing, 2017a).

GEPN Programs

Of all pre-license nurse education programs available in Hawai'i, enrollment demand is highest for the state's only GEPN program. In AY 2016-2017, the GEPN program received 3.4 applications for every available opening for a new student. At the peak of GEPN demand in AY 2012-2013, the program received nearly 6 times the applications as they had available openings. GEPN demand continues to be

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[7] See the U.S. Census Bureau's 2018 report on the impact of the 2007-2009 recession on higher education. Nationally, the recessed economy induced a

preference for associate degree programs over baccalaureate programs for the duration of the recession into the first years of economic recovery.

high in part because any baccalaureate-prepared applicant is eligible to enroll regardless of the field in which they earned their undergraduate degree. Further, students who complete a GEPN program in Hawai'i can earn a BSN and any of the three graduate nursing degrees (i.e., MS, DNP, or PhD). GEPN students are prepared for a range of careers including advanced clinical practice, health care leadership, nursing research, or nurse education.

Figure 5. Applicants, Enrollees, & Graduates for GEPN Programs, 2004-2017
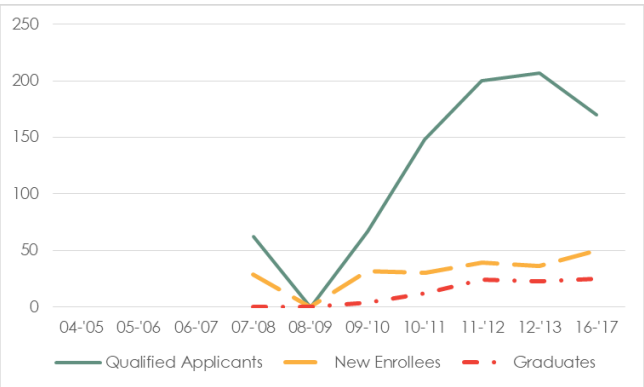
Note. The first GEPN students were enrolled in the spring of AY 2007-2008. Beginning in AY 2009-2010, new GEPN students were admitted in fall semesters. To permit at least one academic year to elapse between admissions, applications were not accepted during AY 2008-2009.

In 2017, 30% of APRNs employed in Hawai'i reported that their initial degree in nursing was at the graduate level, that is they graduated from a GEPN program (Hawai'i State Center for Nursing, 2017a). The current size of the initially graduate-prepared population is likely a result of a nationwide increase in GEPN program availability. Historically, APRNs have entered advanced practice roles after several years in RN practice. The notable proportion of GEPN-prepared APRNs currently employed in the state highlights opportunities for academic-practice partnerships to ensure that recruitment, retention, and onboarding efforts respond appropriately to the changing composition of the advanced practice workforce.

Post-License Programs

Post-license programs do not add new nurses to the workforce. Rather, licensed nurses pursue higher education for professional development. Post-license BSN programs provide an avenue for LPNs to enter RN practice or for diploma- or ADN-prepared RNs to meet career ladder requirements for higher education. Graduate education in nursing prepares RNs for careers as executives, educators, researchers, or advanced practitioners.

Table 5. Capacity, Enrollment, and Graduation Counts for Post-Licensure Nursing Programs, AY 2016-2017

	Post-License BSN	MS	DNP	PhD
Available Seats	396	17[ue]	30	0
Qualified Applicants	121[ue]	16[ue]	52	0
Admissions Offered	118[ue]	14[ue]	17	0
Acceptance Rate	97%	78%	33%	--
New Students Enrolled	104	13[ue]	16	0
Program Graduates*	67[ue]	21	15	7

Note. All program types represent aggregated data for all programs conferring a single degree. Post-License BSN includes LPN to BSN and RN to BSN programs. MS includes traditional MS, RN to MS programs. PhD programs include traditional PhD and BSN to PhD programs. DNP includes traditional DNP and BSN to DNP programs. *Represents the number of students who graduated during AY 2016-2017. These students were admitted in prior years and are not part of the capacity, applicant, or enrollment counts for AY 2016-2017.

In AY 2016-2017 133[ue] nurses enrolled in post-license baccalaureate or graduate degree programs. Of these 78% were RN-to-BSN students, 10% MS students, and 12% were DNP students. The only PhD program in operation in the state in AY 2016-2017 did not admit any new students.

Post-license programs graduated 110 students last academic year. Of these 61% were BSN graduates,

19% were MS graduates, 14% were DNP graduates, and 6% were PhD graduates. Post-license nurse education programs accounted for 29% of the 385 graduates from all nurse education programs in AY 2016-2017.

Student demographic data indicate that men are, on average, less likely to be enrolled in post-license programs than pre-license programs. As post-license programs provide advanced nursing education for already-licensed nurses, and as men are underrepresented in the employed nursing workforce, a lower proportion of men in post-license nurse education programs is to be expected. Among all post-license programs, men are best represented in BSN and MS programs and markedly less well-represented in DNP programs.

The ethnic composition of graduate nursing students suggests a positive outlook for the representativeness of the APRN workforce. Fifty-three percent of Hawai'i's employed APRNs are of Caucasian ancestry which is notably higher than the Caucasian population (43%) in Hawai'i (U.S. Census Bureau, 2017). Substantial overrepresentation of Caucasian persons in the APRN workforce contributes to underrepresentation of nearly all other ethnic groups. The ethnic distribution of current graduate nursing students, however, is closer to that of the population. Specifically, Filipino persons account for 15% of the state's population, 24% of MS students, and 18% of DNP students. Multiethnic persons account for

24% of the state's population and 27% of nurses in DNP programs. Caucasian students comprise 21% of MS students and 35% of DNP students.

Though their representation is also better among graduate nursing students than in the employed nursing workforce, Native Hawaiian persons continue to be underrepresented, especially among APRNs. Currently, 8% of employed APRNs report being of Native Hawaiian[8] ancestry (Hawai'i State Center for Nursing, 2017a). Native Hawaiian students account for 15% and 4% of enrolled MS and DNP students, respectively. These enrollment proportions are not likely to make a marked improvement in the number of Native Hawaiian nurses working at the highest levels of nursing practice.

The age of nurses in post-license programs provides some insight about when in their careers nurses choose to pursue higher education. In all four types of post-license programs, the majority of enrolled students are over the age of 30 which may indicate that nurses are returning to school for better advancement opportunities after establishing a career in nursing practice. Only among post-license BSN programs is a substantial proportion of enrolled students 30 years old or younger. The higher proportion of young post-license BSN students is consistent with an academic path in which students complete an ADN then move on to a baccalaureate program without first entering practice.

Table 6. Demographic Characteristics of Post-License Nursing Students, AY 2016-2017

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[8] Persons of Native Hawaiian or Other Pacific Island (NH/PI) account for 26% of the Hawai'i state population. U.S. Census data count persons in the racial category of Native Hawaiian only when the report being of a single racial or ethnic ancestry and thus the Native Hawaiian-only category underestimates the state's total indigenous population.

Demographic Characteristic	BSN		MS		DNP		PhD	
	#	%	#	%	#	%	#	%
Gender Total	**118**[ue]	**100%**	**33**[ue]	**100%**	**49**	**100%**	**33**	**100%**
Female	96	81%	26	79%	45	92%	25	76%
Male	22	19%	6	18%	4	8%	4	12%
Unknown/Missing	0	0%	1	3%	0	0%	4	12%
Race/Ethnicity Total	**118**[ue]	**100%**	**33**[ue]	**100%**	**49**	**100%**	**33**	**100%**
White	10	8%	7	21%	17	35%	21	64%
Black/African American	0	0%	0	0%	1	2%	1	3%
Hispanic	11	9%	3	9%	1	2%	0	0%
Chinese	2	2%	1	3%	0	0%	1	3%
Filipino	27	23%	8	24%	9	18%	1	3%
Japanese	14	12%	3	9%	1	2%	1	3%
Korean	3	3%	1	3%	3	6%	1	3%
Other Asian	2	2%	1	3%	0	0%	0	0%
Native Hawaiian	17	14%	5	15%	2	4%	5	15%
Samoan	0	0%	0	0%	0	0%	0	0%
Other Pacific Islander	1	1%	2	6%	0	0%	0	0%
American Indian/Alaska Native	1	1%	0	0%	0	0%	1	3%
Multiracial	26	22%	0	0%	13	27%	1	3%
Other Ethnicity	0	0%	0	0%	0	0%	0	0%
Unknown/Missing	4	3%	2	6%	2	4%	0	0%
Age Total	**118**[ue]	**100%**	**33**[ue]	**100%**	**49**	**100%**	**33**	**100%**
20 Years or Younger	0	0%	0	0%	0	0%	0	0%
21 Years to 25 Years	25	21%	3	9%	0	0%	0	0%
26 Years to 30 Years	20	17%	3	9%	8	16%	1	3%
31 Years to 40 Years	42	36%	15	45%	16	33%	4	12%
41 Years to 50 Years	23	19%	11	33%	7	14%	12	36%
51 Years to 60 Years	6	5%	0	0%	10	20%	11	33%
61 Years and Older	1	1%	0	0%	3	6%	5	15%
Unknown/Missing	1	1%	1	3%	5	10%	0	0%

Post-License BSN Programs

Post-license BSN programs take two forms: LPN-to-BSN programs, and RN-to-BSN programs. LPN-to-BSN programs are designed for licensed LPNs to increase their scope of practice to that of RN and simultaneously enter RN practice with a baccalaureate degree. Hawai'i has one LPN-to-BSN program that admits a very small proportion of all post-license BSN students. The four RN-to-BSN programs in the state accepted a total of 118 students in AY 2016-2017 and graduated 67 BSN-prepared RNs.

Figure 6. Applicants, Enrollees, & Graduates for RN-to-BSN Programs in Nursing, 2004-2017
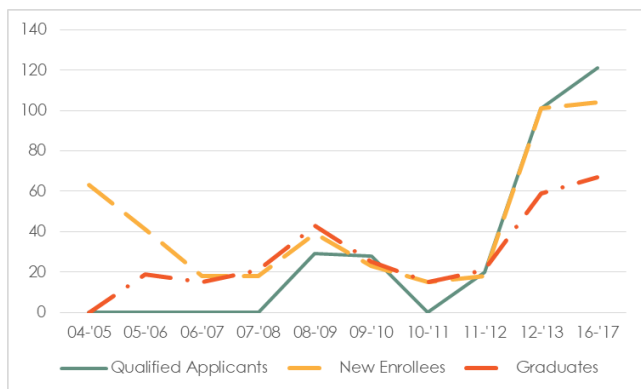
Note. Figure contains data for RN-to-BSN programs only. LPN-to-BSN data were not included in historical data and cannot be graphed. Patterns in which graduations exceed enrollments or enrollments exceed applications are an accurate reflection of available historical data.

Graduate Programs

Master's programs in nursing provide licensed RNs with access to education for career advancement. Graduate education prepares nurses for advanced clinical practice, or opportunities to move into education, leadership, or administrative positions.

Enrollment demand for MS programs was notably lower in AY 2016-2017 than at any point in the last 12 years. In total, MS programs enrolled 13 new students and graduated 15.

Figure 7. Applicants, Enrollees, & Graduates for Master's Programs in Nursing, 2004-2017
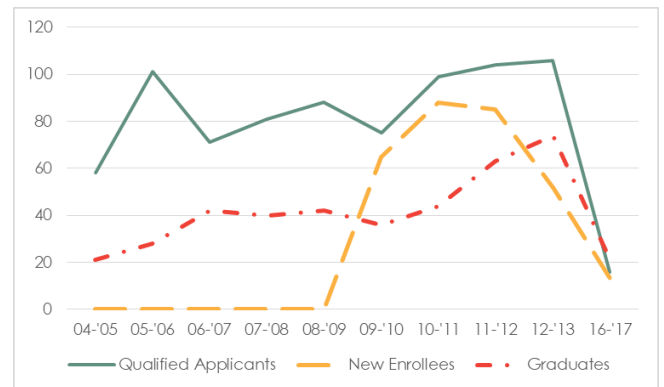
The decline in enrollment demand for MS programs, especially ones that provide academic preparation for advanced practice, is likely due to prospective students' awareness of the increased availability of DNP programs which confer the terminal practice degree in nursing. In AY 2016-2017, DNP programs received more than three times the number of applications as MS programs. The shift in enrollment demand from MS programs to DNP programs was likely attributable to BSN-prepared RNs who wanted to take advantage of the BSN-to-DNP pathway as a means of moving into advanced practice roles.

Figure 8. Applicants, Enrollees, & Graduates for DNP Programs, 2004-2017
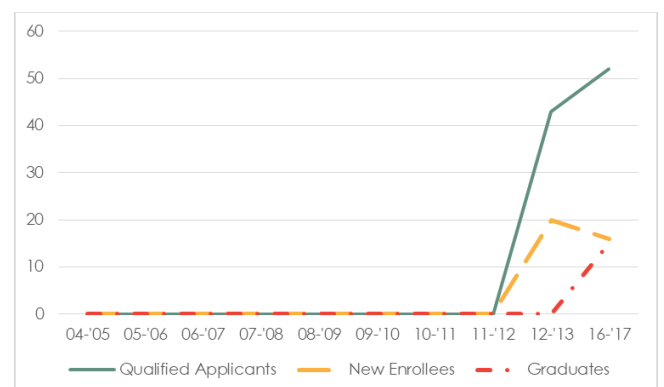
Although enrollment demand for DNP programs was notably higher than for MS programs, DNP programs had limited capacity to accept new students as they only admitted 3 more students than did MS programs.

RNs who intend to pursue careers as nurse researchers or nurse faculty pursue the PhD in nursing. Only one institution offered a PhD program in AY 2016-2017 and did not offer admissions to new students. The program did, however, graduate 7 students with the expertise and educational qualifications to become nurse faculty. The ongoing development of the nurse faculty workforce through the availability of PhD programs in nursing is critical to ensuring the sustainability of Hawai'i's nurse faculty which is likely to be impacted by a significant proportion of expected retirements within the next six years.

Figure 9. Applicants, Enrollees, & Graduates for PhD Programs, 2004-2017
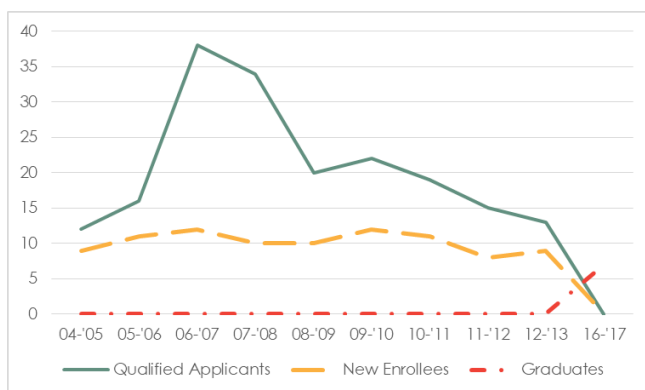
Nurse Faculty in Academic Year 2016-2017

Faculty Positions

The capacity of schools of nursing to accept and enroll qualified applicants is contingent on several factors including the availability of qualified faculty. In 2017, the American Association of Colleges of Nursing (AACN) reported a national nurse faculty vacancy rate of 8% which was classified as a faculty shortage.

Similar to national numbers, Hawai'i had a nurse faculty vacancy rate of 7% during the last academic year. Nurse faculty shortages are worrisome as a lack of qualified faculty limits the number of new students that schools of nursing are able to admit. Enrollment caps stemming from faculty shortages will reduce the overall number of prospective nurses who can be educated in Hawai'i which, in turn, could contribute to an eventual nursing workforce shortage.

Important to note is that the 7% vacancy rate represents only those faculty positions for which funding was secured and active recruitment was ongoing. Many schools indicated that their optimum number of faculty positions for program sustainability and growth exceeded the number of positions for which they had funding support. Vacancy rates, therefore, do not account for necessary faculty positions beyond those for which funding has already been secured.

AACN (2017) further reports that the highest vacancy rates are in faculty positions that require or prefer a doctoral degree. Filling doctoral-preferred faculty positions is difficult because doctoral-prepared nurses tend to be older than master's-prepared nurses at the time that they become faculty and, thus, spend fewer years teaching (AACN, 2017). Given the small

existing supply of doctoral-prepared nurses in Hawai'i,[9] filling positions vacated by nurses with doctoral degrees is a workforce development challenge that requires specific attention.

Faculty Demographic Data

One factor that contributes to nurse faculty shortages is the average age of post-secondary nurse faculty (AACN, 2017). Nationally, the average age of nurse faculty at the time of retirement is 62.5 years. In Hawai'i, 20% of faculty are between the ages of 56 and 60 and 20% are over the age of 61 which means that nearly 40% of nurse faculty can be expected to retire within the next 6 years.

Table 7. Faculty Positions and Vacancies, AY 2016-2017

Position Type	Full-Time		Part-Time		Total	
	#	%	#	%	#	%
Position Total	**143**	**100%**	**59**	**100%**	**202**	**100%**
Filled	131	92%	56	95%	187	93%
Vacant	12	8%	3	5%	15	7%

[9] In Hawai'i, doctoral-prepared nurses account for 1% of the employed nursing workforce. These data come from an unpublished special analysis of the 2017 Hawai'i Nursing Workforce Report and are available upon request from the Center for Nursing.

Table 8. Demographic Characteristics of Nurse Faculty, AY 2016-2017

Demographic Characteristic	Full-Time		Part-Time		Total	
	#	%	#	%	#	%
Gender Total	**131**	**100%**	**56**	**100%**	**187**	**100%**
Female	120	92%	50	89%	170	91%
Male	11	8%	6	11%	17	9%
Unknown/Missing	0	0%	0	0%	0	0%
Race/Ethnicity Total	**131**	**100%**	**56**	**100%**	**187**	**100%**
White	65	50%	25	45%	90	48%
Black/African American	5	4%	1	2%	6	3%
Hispanic	1	1%	2	4%	3	2%
Filipino	7	5%	9	16%	16	9%
Japanese	7	5%	5	9%	12	6%
Korean	2	2%	0	0%	2	1%
Other Asian	2	2%	3	5%	5	3%
Native Hawaiian	6	5%	3	5%	9	5%
Samoan	1	1%	0	0%	1	1%
Other Pacific Islander	0	0%	0	0%	0	0%
American Indian/Alaska Native	2	2%	0	0%	2	1%
Multiracial	5	4%	0	0%	5	3%
Other Ethnicity	1	1%	0	0%	1	1%
Unknown/Missing	27	21%	8	14%	35	19%
Age Total	**131**	**100%**	**56**	**100%**	**187**	**100%**
30 Years or Younger	1	1%	1	2%	2	1%
31 Years to 40 Years	8	6%	10	18%	18	10%
41 Years to 50 Years	21	16%	18	32%	39	21%
51 Years to 55 Years	11	8%	3	5%	14	7%
56 Years to 60 Years	31	24%	7	13%	38	20%
61 Years to 65 Years	22	17%	3	5%	25	13%
66 Years to 70 Years	6	5%	2	4%	8	4%
71 Years and Older	4	3%	0	0%	4	2%
Unknown/Missing	27	21%	12	21%	39	21%
Highest Degree Earned Total	**131**	**100%**	**56**	**100%**	**187**	**100%**
ADN	0	0%	0	0%	0	0%
BSN	6	5%	7	13%	13	7%
Baccalaureate, Non-Nursing	0	0%	0	0%	0	0%
MS, Nursing	56	43%	42	75%	98	52%
MS, Non-Nursing	1	1%	1	2%	2	1%
DNP	10	8%	4	7%	14	7%
Doctoral Practice Degree, Non-Nursing	5	4%	0	0%	5	3%
PhD, Nursing	35	27%	1	2%	36	19%
PhD, Non-Nursing	18	14%	0	0%	18	10%
Unknown/Missing	0	0%	1	2%	1	1%

Note. Chinese was inadvertently removed from the data collection tool schools used to report faculty demographic data and is therefore not included as an ethnic category.

Challenges Facing Hawai'i's Nurse Education Programs

Schools of nursing were asked to report on whether any of six factors had an adverse impact of any of their nurse education programs. Schools provided a binary response in which they indicated the presence or absence of any negative impact as opposed to magnitude of impact. Of the nine schools that provided any response, all but one indicated that their programs had been adversely impacted by at least one of the factors.

Table 9. Factors Adversely Impacting Nurse Education Programs, AY 2016-2017

Challenges Affecting Programs	#	%
Lack of adequate clinical training sites	5	56%
Insufficient funding for hires or program development	4	44%
Lack of preceptors	3	33%
Difficulty filling full-time faculty positions	3	33%
Difficulty filling part-time faculty positions	3	33%
Lack of adequate classroom facilities	2	22%

Note. Percentages are computed out of the total number of schools reporting data on the survey (n=9). The count column sum exceeds 9 and percentage column sum exceeds 100% due to multiple responses from each school.

Faculty Hiring & Insufficient Funding

The most frequently cited barrier to faculty hiring is that faculty positions offer significantly less financial compensation than do clinical positions. In Hawai'i, 33% of schools reported difficulty hiring part-time faculty, 33% reported difficulty hiring full-time faculty, and 44% reported insufficient funding for faculty hires or program development as having a negative impact on their nurse education programs.

Availability of Clinical Training Sites

More than half of Hawai'i's schools of nursing reported difficulty in securing sites at which students can complete their required clinical training rotations. A limited number of facilities provide regular access to students for clinical placements and there is strong competition for available slots.

Further, due to the increased acuity of hospital patients and decreased length of stay, many facilities have decreased the maximum cohort size for clinical placements from as many as 10 students to as few as 6. Lower clinical cohort caps require schools to divide their enrolled students into more cohorts. As each cohort requires instruction by clinical faculty, schools of nursing have to hire additional instructional staff which, in turn, increases the cost to operate academic programs.

Availability of Preceptors

One-third of schools of nursing reported a difficulty in securing the preceptors necessary to provide one-on-one clinical training experiences for students. In AY 2018-2019 as part of their standard curriculum, Hawai'i's graduate nurse education programs will send APRN students into the field for an estimated 250 clinical training rotations.[10] Preceptors will have to meet this demand as well as demand from final-semester BSN students and APRN students from out of state.

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[10] Data were collected as part of an interdisciplinary fact-finding activity. Data were included and cited in testimony submitted by the Hawai'i State Center for Nursing in support of SB2298 during the 2018 legislative season.

The bill and associated testimony can be found retrieved from https://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=SB&billnumber=2298&year=2018.

A shortage of preceptors stems in part from the additional expense incurred by facilities when their staff nurses become preceptors. Nurses who serve as preceptors to nursing students must not only do their required clinical duties but also supervise and teach students in the course of doing their regular jobs. As a result, preceptors take longer to complete clinical tasks, which results in increased costs to the facility in the form of additional personnel hours and fewer patients seen per hour. To recoup those costs, some facilities charge schools a fee for access to clinical training opportunities and some preceptors require direct compensation for their time. Of all of the schools that reported being affected by at least one challenge, 20% reported that they have paid either sites or preceptors to secure ongoing access to clinical training. Paying for clinical placement opportunities may not be feasible for all schools, however, as 44% of them reported being underfunded as compared to what they need for program growth and 20% report that they have raised student tuition and fees to offset increased program costs.

Table 10. Tactics Used by Nurse Education Programs to Address Adverse Impacts

Responses to Challenges	#	%
Reduce cohort sizes	5	63%
Raise tuition/fees	2	25%
Reduce admission frequency	1	13%
Pay clinical training sites	1	13%
Pay individual preceptors	1	13%
Eliminate programs/tracks	0	0%

Note. Percentages are computed out of the total number of schools reporting at least one barrier to program growth or sustainability (n=8). The percentage column sum exceeds 100% due to multiple responses from each school.

Conclusions

Enrollment Demand for Entry to Practice Programs Exceeds Capacity

Data from the AY 2016-2017 educational capacity survey reveal that enrollment demand exceeds enrollment capacity among all of Hawai'i's initial entry-to-practice nurse education programs. DLIR's projections of 14% growth in the nursing workforce between 2014 and 2024 suggest that nurse education programs may need to expand their capacity to enable the nursing workforce to fill the projected number of openings.

It is important to note that while there exist forecasting models that can estimate the timing and severity of anticipated nurse shortages, they require data inputs about the existing workforce, changes in the number of prospective nurses being educated in the state, and demand for nurses in specific positions and specialties as reported by employers. Currently, Hawai'i does not collect the necessary demand data to make workforce shortage projections appropriately useful. As a result, it is difficult to conclude the extent to which academic programs are currently educating enough nurses to meet future employment demand.

Nurses Need Formal Support for Role Transitions

As nurses complete higher education, they will likely shift into new roles. The IOM recommends that formalized transition support be provided to new graduate nurses *and* experienced nurses who pursue a practice change. Though experienced nurses' prior experience and education provide essential expertise for their new positions, they will enter their new roles as novices.

Practice transition support will ensure that nurses are properly oriented to their new organizations, roles, and responsibilities. Orientation facilitates professional transitions (Fritz, 2018) which, in turn, supports retention (IOM, 2011). In particular, new nurse faculty require transition support because academia is often notably different from clinical practice, and because current nursing students have high expectations for faculty's use of technology in instruction.

Nurses Practice Where They Are Educated

As the educators of more than half of Hawai'i's employed nurses, our in-state schools of nursing are crucial to ensuring that the nursing workforce meets the demand for health care stemming from a range of factors including healthcare reform, payment transformation, emerging care models, and an aging population. Access to in-state education increases the likelihood that local residents obtain nurse education at home which, in turn, increases the likelihood that they practice at home. When residents become health care practitioners who work in the communities they come from, they can provide culturally competent care which can improve patient outcomes.

In addition to supporting the development of a culturally competent nursing workforce at all levels of practice, local graduate nurse education programs contribute to the development of the primary care provider supply. A total of 15% of Hawai'i's APRNs are employed in primary care provider shortage areas, 30% are employed in medically underserved areas/populations, [11] and 26% are employed in rural areas[12] (Hawai'i State Center for Nursing, 2017b). Hawai'i's APRN education programs, increase access to primary care resources to the areas of the state that need them the most.

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[11] Primary care provider shortage areas and medically underserved areas/populations are defined by the Health Resources & Services Administration (HRSA).

[12] Rurality is defined based on definitions by the U.S. Office of Management and Budget. All counties except the City & County of Honolulu are considered rural under the OMB definition of rurality.

Appendices

Appendix A – Method

The AY 2016-2017 Educational Capacity survey was collected in February of 2018. Prior to the beginning of data collection, the Center conducted two planning interviews with administrators at two of Hawai'i's face-to-face nurse education programs. One administrator was from a 4-year institution and the second was from a 2-year institution. Interviews lasted about 60 minutes and focused on how to improve the usability of the online survey and the value of data reporting.

Based on the administrators' feedback, the Center's researcher modified the programming of the online survey to decrease the length and increase ease of completion by hiding questions and response options that were not relevant to a given school based the programs they offered. For schools with a small number of programs, this reduced the overall length of the survey substantially.

To further facilitate schools' ability and willingness to complete the survey, the Center contacted the deans and/or directors of each school of nursing by phone to introduce the survey, notify them that it would be coming by email, and answer any questions about the purpose of the survey. Subsequent to phone calls, the Center sent a save the date, which was accompanied by a list of data points to be collected and answers to frequently asked questions. Provision of informational resources was intended to improve schools' ability to assemble the necessary data in advance and complete the survey with greater efficiency.

A link to the online survey was sent to each school of nursing on February 1, 2018. Schools that did not submit their data two weeks after the initial link was distributed were sent a reminder to complete the survey via email. Any school that did not submit their survey by the end of February was contacted by phone to confirm their intention to participate. All schools responded by the first week of March.

The survey instrument was based on the minimum dataset for educational capacity surveys recommended by the National Forum of State Nursing Workforce Centers, previous years' instruments, and the annual reporting tools used by the national accrediting agencies and the Hawai'i Board of Nursing. The full instrument is available on request to the Center.

Appendix B – Qualified Applicants, Enrollments, and Graduates by Program by Academic Year, 2004-2017

Program	Academic Year									
Number of Qualified Applicants										
	'04-'05	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10	'10-'11	'11-'12	'12-'13	'16-'17
LPN	131	212	28	19	57	94	116	78	62	58
ADN	420	504	415	473	661	693	872	673	249	362
BSN	1501	1435	1322	1323	765	566	622	791	747	557
GEPN	0	0	0	62	0	67	148	200	207	170
MS	58	101	71	81	88	75	99	104	106	16
DNP	0	0	0	0	0	0	0	0	43	52
PhD	12	16	38	34	20	22	19	15	13	0
Number of New Enrollments										
	'04-'05	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10	'10-'11	'11-'12	'12-'13	'16-'17
LPN	63	81	20	10	29	47	50	28	27	28
ADN	169	172	255	243	219	211	298	210	359	106
BSN	697	628	890	725	482	447	512	470	511	407
GEPN	0	0	0	29	0	32	30	39	36	50
MS	0	0	0	0	0	65	88	85	52	13
DNP	0	0	0	0	0	0	0	0	20	16
PhD	9	11	12	10	10	12	11	8	9	0
Number of Graduates										
	'04-'05	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10	'10-'11	'11-'12	'12-'13	'16-'17
LPN	51	71	17	9	5	12	28	43	25	25
ADN	115	135	129	156	168	165	197	113	186	57
BSN	217	302	322	460	428	370	404	382	396	235
GEPN	0	0	0	0	0	4	12	24	23	25
MS	21	28	42	40	42	36	44	63	74	21
DNP	0	0	0	0	0	0	0	0	0	15
PhD	0	0	0	0	0	0	0	0	0	7

Appendix C – Program Admissions by Semester for Associate-Granting Institutions, AY 2016-2017

	LPN			ADN			ADN-Bridge		
Number of Institutions Operating Program during AY	*2*			*4*			*1*		
Semesters in which new students were accepted	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer
Hawaiʻi Community College	●			●					
Kapiʻolani Community College	●		●	●	●		●		●
Kauaʻi Community College				●					
Maui College				●					

Note. A gray cell indicates that an institution did not offer a program. A dot (●) indicates that an institution admitted to a program. A blank cell indicates that an institution operated a program but did not accept new students.

Appendix D – Program Admissions by Semester for Baccalaureate-Granting Institutions, AY 2016-2017

	LPN to BSN			RN to BSN			BSN			GEPN			MS			RN to MS			PhD			DNP			BSN to DNP			BSN to PhD		
Number of Institutions Operating Program during AY	*1*			*4*			*4*			*1*			*2*			*2*			*1*			*2*			*2*			*1*		
Semesters in which new students were accepted	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer
Argosy University				——	——																									
Chaminade University							●																							
Hawai'i Pacific University	●	●		●	●		●	●					●	●		●	●													
University of Hawai'i at Hilo				●	●		●															●			●					
University of Hawai'i at Manoa				●			●			●			●			——	——					●			●				——	——

Note. A gray cell indicates that an institution did not offer a program. A dot (●) indicates that an institution admitted to a program. A strikethrough indicates that a school did not admit any new students to an existing program. A blank cell indicates that an institution operated an existing program but did not accept new students.

References

American Association of Colleges of Nursing (2017). *Nursing Faculty Shortage Fact Sheet.* Retrieved from
http://www.aacnnursing.org/Portals/42/News/Factsheets/Faculty-Shortage-Factsheet-2017.pdf

APRN Consensus Work Group & National Council of State Boards of Nursing APRN Advisory Committee (2008). *Consensus Model for APRN Regulation: Licensure, Accreditation, Certification & Education.* Retrieved from
https://www.ncsbn.org/Consensus_Model_Report.pdf

Department of Commerce and Consumer Affairs (2013). Amendments and Compilation of Chapter 16-89, *Hawai'i Administrative Rules.* Retrieved from http://cca.hawaii.gov/pvl/files/2013/08/har_89-c1.pdf

Fritz, E. (2018). Transition from clinical to educator roles in nursing: An integrative review. *Journal for Nurses in Professional Development, 34,* 67-77. doi: 10.1097/NND.0000000000000436

Hawai'i Revised Statutes (HRS) Chapter 457. Retrieved from https://www.capitol.hawaii.gov/hrs/isysquery/2cf2a3a0-a8ff-4fcd-a24b-f40857f203d3/1/doc/#hit26

Hawai'i State Center for Nursing (2017a). *2017 Nursing Workforce Supply Survey Special Report: Employment Location of APRNs.* Unpublished report.

Hawai'i State Center for Nursing (2017b). *Hawai'i's Nursing Workforce 2017.* Retrieved from
http://www.hawaiicenterfornursing.org/wp-content/uploads/2017/11/2017-Hawaii-State-Nursing-Workforce-Supply-Report-Final-2-2.pdf

Hawai'i State Department of Labor and Industrial Relations Research and Statistics Office (2017). *Long-Term Occupational Projections, State of Hawai'i, 2014-2024 (Revised).* Retrieved from
https://www.hiwi.org/vosnet/gsipub/documentview.aspx?enc=5RFcwuajlyp/6GdLeOkqsp00cvwsBV8305jbMYrxjvs=

IOM (Institute of Medicine of the National Academies) (2011). *The Future of Nursing: Leading Change, Advancing Health.* Washington, D.C.: The National Academies Press.

National Forum of State Nursing Workforce Centers (2009). *Nursing Education Minimum Dataset.* Retrieved from
http://nursingworkforcecenters.org/wp-content/uploads/2016/06/Nursing_Education_Dataset.pdf

U.S. Bureau of Labor Statistics (2012). *BSL Spotlight on Statistics: The Recession of 2007-2009.* Retrieved from
https://www.bls.gov/spotlight/2012/recession/pdf/recession_bls_spotlight.pdf

U. S. Census Bureau (2017). *American Community Survey 5-Year Estimates, Table DP-05.* Retrieved from
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_DP05&prodType=table

U. S. Census Bureau (2018). *Census Shows Great Recession's Impact on College Enrollment.* Retrieved from
https://www.census.gov/library/stories/2018/06/going-back-to-college.html?em1=gd&utm_campaign=20180613msacos1ccstosc&utm_medium=email&utm_source=govdelivery