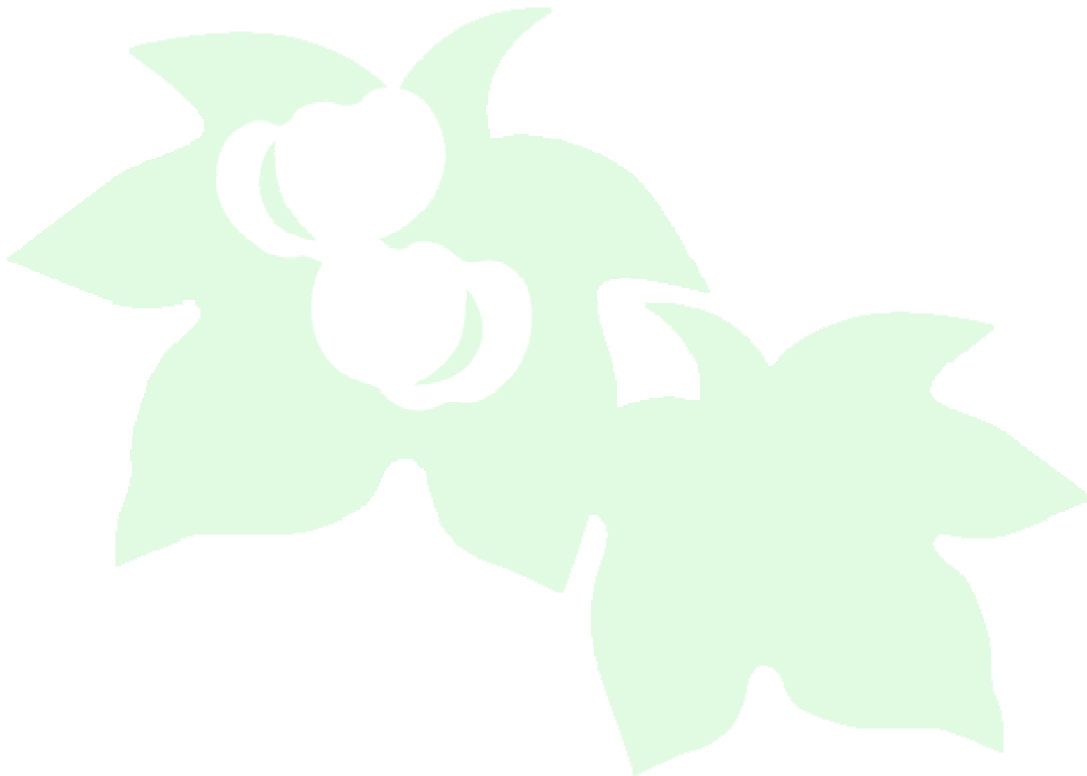




Hawai'i State Center for Nursing

**Nursing Education Programs
2005 - 2006**



September 2007

Written by:

Associate Professor Sandra A. LeVasseur

Associate Director, Research

Hawaii State Center for Nursing

University of Hawaii at Manoa

School of Nursing & Dental Hygiene,

2528 McCarthy Mall

Webster Hall 439

Honolulu, Hawaii

Phone: (808) 956-0894

Fax: (808) 956-3257

Email: sandraal@hawaii.edu

Table of Contents

TABLE OF CONTENTS	I
INDEX OF TABLES	II
INDEX OF FIGURES	III
ABSTRACT	1
BACKGROUND	5
PURPOSE	6
METHODS	6
TYPES OF NURSING PROGRAM	7
PROGRAM CAPACITY, APPLICATIONS, & ENROLLMENT	10
LICENSED PRACTICAL NURSE PROGRAMS	10
STUDENT ENROLMENT AND ADMISSION SLOTS	10
LPN STUDENT DEMOGRAPHICS	12
GRADUATES IN THE LPN PROGRAMS	13
REGISTERED NURSE PROGRAMS	13
STUDENT ENROLMENT AND ADMISSION SLOTS	13
AS AND BS NURSING STUDENT DEMOGRAPHICS	14
GRADUATES IN AS AND BS PROGRAMS	16
GRADUATE NURSING PROGRAMS	16
STUDENT ENROLMENT AND ADMISSION SLOTS	16
MSN AND PHD STUDENT DEMOGRAPHICS	16
GRADUATES IN THE MSN AND PHD PROGRAMS	18
COMPARISON OF STUDENTS BY SCHOOL YEAR	18
FACULTY	22
FACULTY DEMOGRAPHICS	23
ISSUES AFFECTING PROGRAM CAPACITY	25
DISCUSSION	26
CONCLUSION	27
REFERENCES	29

Index of Tables

TABLE 1: NURSING PROGRAMS IN HAWAII BY LOCATION, 2005 – 2006.....	9
TABLE 2: LPN AND LADDER PROGRAMS APPLICATIONS, CAPACITY, AND ENROLLMENT FOR 2005 - 2006	11
TABLE 3: DEMOGRAPHIC CHARACTERISTICS OF LPN NURSING STUDENTS IN THE LPN AND LADDER PROGRAMS, 2005 -2006	12
TABLE 4: AS AND BS PROGRAMS APPLICATIONS, CAPACITY, AND ENROLLMENT FOR 2005 - 2006	13
TABLE 5: DEMOGRAPHIC CHARACTERISTICS OF NURSING STUDENTS IN REGISTERED NURSE PROGRAMS, 2005 -2006	15
TABLE 6: GRADUATE PROGRAM APPLICATIONS, CAPACITY, AND ENROLLMENT	16
FOR 2005 - 2006 SCHOOL YEAR	16
TABLE 7: DEMOGRAPHIC CHARACTERISTICS OF NURSING STUDENTS IN GRADUATE PROGRAMS, 2005 -2006	17
TABLE 8: NUMBER OF FACULTY AND VACANCIES IN HAWAII NURSING EDUCATION PROGRAMS, 2005 – 2006.....	22
TABLE 9: HIGHEST LEVEL OF EDUCATION OF FACULTY, 2005 - 2006	23
TABLE 10: DEMOGRAPHIC CHARACTERISTICS OF FACULTY, 2005 - 2006	24
TABLE 11: PERCENTAGE OF NURSING PROGRAMS LACKING RESOURCES, 2005 - 2006.....	25

Index of Figures

FIGURE 1: COMPARISON IN NUMBER OF ADMISSION SLOTS IN PUBLIC INSTITUTIONS BY SCHOOL YEAR.....18

FIGURE 2: NUMBER OF QUALIFIED APPLICANTS NOT ENROLLED IN PUBLIC INSTITUTIONS BY SCHOOL YEAR.....19

FIGURE 3: COMPARISON IN NUMBER OF STUDENTS NEWLY ENROLLED IN NURSING PROGRAMS BY SCHOOL YEAR ...20

FIGURE 4 REVEALS THE NUMBER OF NURSING STUDENTS GRADUATING IN THE BS PROGRAMS HAS INCREASED BETWEEN SCHOOL YEARS 2004-05 AND 2005-06. HOWEVER, NUMBERS OF AS PROGRAMS GRADUATES HAVE DECLINED. NUMBERS OF LPN GRADUATES AND MSN HAVE ALSO INCREASED.21

FIGURE 4: COMPARISON IN NUMBER OF GRADUATING STUDENTS IN NURSING PROGRAMS BY SCHOOL YEAR.....21

FIGURE 5: THE PROJECTED SHORTAGE AND GROWTH IN EDUCATIONAL CAPACITY TO MEET NEED27

Abstract

Forecast data of the registered nurse workforce indicates that Hawaii will experience a growing nursing shortage over the next fifteen years as veterans and baby boomers retire from the profession. Out of this group the most significant effect will be felt in the tertiary education arena where 65% of faculty were 50 years or older in 2006. The aging trend in faculty indicates that we may have young people interested in entering the nursing profession and apply to nursing programs however the qualified applicants will be unable to enter nursing programs because of declining numbers of faculty to teach.

The state of Hawaii has eight nursing education programs. Two are private institutions and six programs are part of the University of Hawaii public system. Nursing programs are located on the islands Oahu, Maui, Hawaii, and Kauai. As of 2006, nursing programs in Hawaii are turning away approximately 14% (255) of qualified applicants from Associate Degree (AS), Bachelor's Degree (BS), RN-BS programs and 29% (34) from Master's in Nursing (MSN) and PhD programs.

To strategically address the growing workforce shortage the Hawaii State Center for Nursing and the nursing programs across the state have implemented an annual survey to collect ongoing student enrollment data, student and faculty demographics, and faculty vacancy rates. Trending data will be generated over time to inform workforce planning and policy at the state and regional level.

The University of Hawaii System, School of Nursing and Dental Hygiene and Community Colleges, approves the maximum number of pre-licensure students that may be enrolled (i.e., admission slots) in programs that offer a licensed practical nursing (LPN) diploma or certificate, an associate's degree in nursing (AS), or a bachelor of science in nursing (BS). Private institutions have unlimited admission slots. However, all programs may have difficulty filling admission slots if they currently lack faculty, facilities, or clinical placement sites to support the number of admission slots. They also may not fill admission slots if there are few qualified

applicants, or if admitted applicants do not enroll because of financial or personal reasons or acceptance to another educational program.

Survey findings indicate that during 2005-06 the percent of admission slots unfilled or filled in the public system were

- 36% (48) of the admission slots for clinical ladder programs were unfilled
- 2% (1) of admission slot for LPN program was unfilled
- 100% (90) of admission slots for AS program were filled
- 9% (13) of admission slots for BS program were unfilled i.e., all of these unfilled slots were in RN to BS programs

In 2005 - 2006, the majority of nursing programs reported they had more qualified applicants than the number of approved / available admission slots. The one exception was the public institutions offering the RN to BS program. These programs had more admission slots available than qualified applicants.

Overall, for the public institutions providing data and enrollment information, an estimated 542 qualified applicants were not enrolled.

- LPN programs reported that 131 qualified applicants were not enrolled
- Ladder programs reported that 122 qualified applicants were not enrolled
- AS programs reported that 210 qualified applicants were not enrolled
- Public pre-licensed BS programs reported 45 qualified applicants were not offered enrolment and 12 did not take up an offer to enroll. Private pre-licensed BS programs where an unset number of admission slots are available reported that 791 of qualified applicants did not take up the offer to enroll
- RN to BS programs offered by two public programs reported 13 slots were unfilled and 2 qualified applicants did not take up the offer to enroll. The one private program reported 1 qualified applicant did not take up the offer to enroll
- MSN programs reported 29 qualified applicants were not enrolled
- PhD program reported 5 qualified applicants were not enrolled

A total of 574 graduates received a LPN, AS or BS in the undergraduate programs; 28 graduates received a MSN and 8 graduates received a PhD in graduate nursing programs in Hawaii for 2005-06. Survey results for the 2005-06 school year show that;

- 71 graduates received a certificate or diploma through a LPN program,
- 79 students in the ladder program completed requirements for the LPN portion of the program,
- 56 graduates completed the ladder program and received an AS,
- 65 graduates received an AS,
- 302 graduates received a BS,
- 28 graduates received a MSN, and
- 8 graduates received a PhD in nursing.

However, not all undergraduates are new to the practice of nursing. For example, survey data identifies that approximately 7 percent (41) of BS students newly enrolled during 2005-2006 were already licensed as registered nurses (RNs) and returning to upgrade their level of education.

The immediate capacity of nursing education programs to accept students is determined by the availability of faculty, facilities, and clinical placement opportunities. Survey findings related to faculty in Hawaii nursing programs show that:

- Out of the race/ ethnicity data provided on 252 faculty, an estimated 1.2% of faculty members are identified as African American, 3.2% as of mixed racial / ethnic descent, <1% as Pacific Islander, 3.2% as Hispanic, 3.2% as Native Hawaiian, 23% as Asian, and 65% as Caucasian.
- Out of the age data provided on 132 full time faculty, 68% of full-time faculty are 50 years or older.
- Out of age data provided on 122 adjunct faculty, 63% of adjunct faculty are 50 years or older.
- The overall vacancy rate for full-time faculty positions in nursing education programs is 15% (20 out of 133 positions) and the vacancy rate for adjunct faculty positions is 0% (0 out of 149 positions).

When asked about issues of concern for their nursing program, survey respondents reported most frequently difficulties in filling full-time faculty positions. The lack of sites for clinical placements; followed by the lack of faculty for clinical placements and the lack of classroom facilities were also identified as issues of concern.

Of the eight institutions surveyed:

- 75% report difficulty filling full-time or 50% adjunct faculty positions with a particular emphasis on certain specialty areas such as medical/surgical, pediatrics, obstetrics, and mental health.
- 63% lack enough sites for clinical placements for nursing students.
- 63% lack faculty to support the clinical placements of students.
- 50% lack classroom space.
- 50% lack funding support.

Numerous factors such as faculty vacancies, limited clinical placement sites and classroom facilities continue to diminish the capacity of nursing education programs to accept greater numbers of students. Even if there is an increase in the number of young people seeking to become nurses in Hawaii, we cannot increase current production without increasing nursing faculty and redesigning how we do business.

In response to the education capacity issues the University of Hawaii statewide nursing consortium is redesigning nursing curriculum and learning strategies to increase flexibility and accessibility. Other initiatives such as simulation labs across the state will help alleviate some of the issues concerning lack of clinical placement sites.

Background

Registered nurses (RNs) are the largest licensed healthcare professional group in the nation with 83.2% (2,421,461 RNs) employed in 2004.¹ The number of RNs with an associate degree increased from 19% (308,616 nurses) in 1980 to 42.2% (1,227,256) of the workforce in 2004. For RNs who completed their initial education in a baccalaureate degree program (BS), the data indicate an increase from 17.3% (287,993) in 1980 to 30.5% (887,223) in 2004. In addition, an estimated 0.5% of RNs in 2004 (15,511) received their initial nursing education through a master's or doctoral degree program.¹

The supply of registered nurses is said to be dependent upon the number of new nursing graduates entering the profession, and the number of existing nurses remaining in the workforce. However the rapidly aging population will have significant impact on the number of nurses working in the profession. In March 2004, the National Sample Survey of Registered Nurses (NSSRN) identified that the national average age of the registered nurse population was 46.8 years, more than 4 years greater than in 1996 when the average age was 42.3 years.¹ Nursing faculty who educate new nurses, have an average age of 46.8, but more concerning is those with doctorates in nursing or related fields average 55.7 years.¹

The global nursing shortage is projected to worsen as RNs in the veteran and baby boomers generations retire; fewer young people choose nursing as a career; and high burnout rates up to 40% in the present international nursing workforce continue.²⁻⁴ The American Association of Colleges of Nursing (2004)⁵ reported that 614 faculty vacancies were identified at 300 nursing schools across the country. This vacancy rate is projected to increase as the rate of retirement accelerates over the next ten years.⁵ Lack of faculty is affecting both the overall nursing shortage and the capacity of nursing programs to accept and teach students who could join the nursing workforce.⁶ Nursing programs across the country will not be able to slow the decline in workforce without increasing nursing faculty.

The Hawai'i State Center for Nursing (HSCFN) was established by the Hawaii State Legislature in 2003 "to address nursing workforce issues" Act 198 (HB 422 HD2, SD2, CD1, SB 2072). The primary functions of the HSCFN include:

1. Collect and analyze data and prepare and disseminate written reports and recommendations regarding the current and future status and trends of the nursing workforce;
2. Conduct research on best practice and quality outcomes;
3. Develop a plan for implementing strategies to recruit and retain nurses;
4. Research and report data related to the retention of the nursing workforce.

The Center's mission focuses on a number of workforce issues underlying the nursing shortage. These include capturing nursing supply and demand data, developing and implementing recruitment and retention strategies that target nursing staff and faculty, and establishing data surveillance and reporting system to trend educational capacity of nursing programs.

Purpose

In light of the growing nursing shortage in Hawaii the HSCFN has identified the need for the annual collection of statewide data concerning student enrollments and nursing education capacity. The primary purpose of annual surveying will be to collect and track; the types of programs offered, enrollment capacity, the number of graduates, student and faculty demographics, and current factors impacting program capacity. The data will provide the means for trending Hawaii's nursing supply and inform statewide nursing workforce planning.

Methods

In 2005, the Hawaii State Center for Nursing began conducting annual surveying of all nursing education programs in the State. The Hawaii State Center for Nursing utilizes the Michigan Center for Nursing's survey instrument developed by the Public Sector Consultants Inc. (PSC).⁷

In November 2006, the second annual survey '*Survey of Nursing Education Programs*' was mailed to the eight education institutions that offer nursing education programs in the State of Hawaii. Several follow-up phone calls and e-mail notices were used to prompt response to the survey. By March 2007, surveys were returned by all eight institutions.

Survey recipients were requested to complete the survey with information for all nursing education programs offered during the 2005-2006 school year. If they were unable to report

actual numbers, they were offered the options of providing an estimate (and labeling the data as an estimate) or indicating that the data were not available. Several programs indicated that they did not keep information on the demographic variables' and/or break out information on the demographic variables of their student population and/or faculty. Some programs were unable to provide the number of students enrolled. Some programs provided an estimate of student numbers. Response rates are indicated in the data tables.

Types of Nursing Program

There are a variety of ways to obtain a nursing certificate or degree in Hawaii. Respondents were asked to classify the type of nursing education programs offered by their institution according to the definitions used in Table 1.

Since many of the education institutions surveyed offer more than one type of nursing education program, survey respondents were asked to mark all that apply. A single education institution may be counted multiple times in Table 1. For example, one institution may be counted in the number of LPN programs, ladder programs, and LPN to AS programs if it offers the opportunity to complete curriculum requirements through each of these types of programs. Similarly, a single education institution may be counted in the BS programs, the LPN to BS programs, and the RN to BS programs if each of these options is available.

A count of the institutions offering programs within each of the major program classifications (i.e., LPN, AS, BS, MSN, and PhD) shows that during the 2005-2006 school year,

- Five institutions offered some form of licensed practical nursing (LPN) program (a LPN program and/or a ladder program),
- Four institutions offered some form of program that awards an associate's degree in nursing (AS),
- Four institutions offered some form of a bachelor of science in nursing (BS) program,
- Three institutions offered some form of a master's degree in nursing (MSN) program, and
- One institution offered a PhD in nursing.

Survey respondents were asked if their institution offered a certificate program beyond a baccalaureate or master's degree in any of the areas of concentration listed below. Results show that

- Two institutions offered a certificate program in advanced practice (i.e., nurse practitioner and clinical nurse specialist),
- Two institution offered a certificate program in nursing education,
- One institution offered a certificate program in nursing administration,
- One institution offered a certificate in clinical nurse specialist education, and
- None offered a certificate program in nursing informatics.

TABLE 1: NURSING PROGRAMS IN HAWAII BY LOCATION, 2005 – 2006

	Nursing programs
Non-Baccalaureate Programs	
Licensed Practical Nurse (LPN) – program requires at least one year of full-time coursework and awards a diploma or certificate of completion as a practical nurse.	<ul style="list-style-type: none"> • Hawaii Community College • Kapiolani Community College • University of Phoenix
“Ladder” Program: Licensed Practical Nurse (LPN) combined with an associate’s degree in nursing (AS) – After completing one year or more of coursework, students meet requirements for licensure as a practical nurse; after completing additional years of coursework students are awarded an associate’s degree in nursing.	<ul style="list-style-type: none"> • Kauai Community College • Maui Community College
Licensed Practical Nurse (LPN) to AS – program admits LPNs and awards an associate’s degree in nursing.	<ul style="list-style-type: none"> • Kapiolani Community College • Maui Community College
Associate’s degree in nursing (AS) – program requires at least two academic years of full-time college coursework and awards an associate’s degree in nursing.	<ul style="list-style-type: none"> • Hawaii Community College • Kapiolani Community College • Maui Community College
Baccalaureate Programs	
Bachelor of science in nursing (BS) – Admits students with no previous nursing education and awards a bachelor of science degree in nursing; requires at least four academic years of college coursework.	<ul style="list-style-type: none"> • University of Hawaii at Hilo • University of Hawaii at Manoa • Hawaii Pacific University
LPN to bachelor of science in nursing (BS) – Admits LPNs and awards a bachelor of science degree in nursing.	<ul style="list-style-type: none"> • Hawaii Pacific University
Registered Nurse (RN) to bachelor of science in nursing (BS) – Admits RNs and awards a bachelor of science degree in nursing.	<ul style="list-style-type: none"> • Hawaii Pacific University • University of Hawaii at Hilo • University of Hawaii at Manoa
Accelerated BS – Admits students with a previous baccalaureate degree in another discipline and awards a BSN in an accelerated format.	<ul style="list-style-type: none"> • University of Hawaii at Manoa
Master of Science Programs	
RN to MSN – Admits RNs and awards a master of science in nursing.	<ul style="list-style-type: none"> • Hawaii Pacific University • University of Phoenix
BSN to MSN – Admits only students with a BS and awards a master of science in nursing.	<ul style="list-style-type: none"> • Hawaii Pacific University • University of Hawaii at Manoa
Doctoral Programs	
MSN to PhD – Admits students with an MSN and confers a doctor of philosophy (nursing).	<ul style="list-style-type: none"> • University of Hawaii at Manoa

Program Capacity, Applications, & Enrollment

Hawaii's public University of Hawaii system School of Nursing & Dental Hygiene (SONDH) and Community Colleges determine the maximum number of students that may be enrolled (i.e., admission slots) in programs that offer a LPN diploma or certificate, an AS, a BS for pre-licensure students i.e., students who are not already licensed as a registered nurse (RN), and PhD. For the 2005-06 school year the UH system reported setting no limit for slots in the Master of Nursing program. Private institutions continue to report having no limits set for admission slots available in all programs.

Licensed Practical Nurse Programs

Student Enrolment and Admission Slots

Table 2 identifies that 62% (131) of LPN program qualified applicants and 60% (122) of Ladder program qualified applicants were not enrolled.

As shown in Table 2, public institutions approved 40 admission slots for LPN students during 2005 - 2006. An additional 130 admission slots were approved for students entering a ladder program, which combines a LPN program with an AS program. Thirty-nine (98%) students were reported to be newly enrolled in the LPN program and 82 (63%) in the ladder programs. Overall, 2.5% (1) of the admission slots for the LPN program and 37% (48) of the admission slots for the Ladder programs were unfilled.

TABLE 2: LPN AND LADDER PROGRAMS APPLICATIONS, CAPACITY, AND ENROLLMENT FOR 2005 - 2006

	LPN programs	Ladder programs
Number of applicants	263	334
Number of applicants meeting minimum admission requirements	212	204
Number of students newly enrolled (admitted during 2005 -2006 and began classes)	81	82
Number of qualified applicants not enrolled	131	122
Number of admission slots		
Public	40	130
Private	No limit	No limit
Number of students newly enrolled (admitted during 2005 – 2006 and began classes)		
Public	39	82
Private	42	n/a*
Number of unfilled slots		
Public	1	48

*n/a = not applicable;

LPN Student Demographics

LPN programs have a high percentage of students over the age of 25.

TABLE 3: DEMOGRAPHIC CHARACTERISTICS OF LPN NURSING STUDENTS IN THE LPN AND LADDER PROGRAMS, 2005 -2006

	LPN Students
	Number (%)
Gender:	
Female	227 (87%)
Male	33 (13%)
Gender (Total)	260 (100%)
Race/Ethnicity:	
African-American	0
Caucasian	32 (12%)
Asian (<i>please break out</i>)	56 (22%)
Chinese	2
Filipino	40
Japanese	10
Korean	1
Other Asian	3
Native Hawaiian	12 (5%)
Pacific Islander (<i>please break out</i>)	0
Samoan	0
Other Pacific Islander	0
American Indian/Native Alaskan	1 (<1%)
Mixed (<i>2 or more races</i>)	11 (4%)
Some Other Race	2 (<1%)
Hispanic	1 (<1%)
Race/Ethnicity (Total)	115 (44%)
Age:	
18-21	21 (8%)
22-24	37 (14%)
25-29	49 (19%)
30-34	48 (18%)
35-39	39 (15%)
40-44	30 (12%)
45-49	13 (5%)
50-54	16 (6%)
55-59	6 (2%)
60+	1 (1%)
Age (Total)	260 (100%)

Graduates in the LPN Programs

During the 2005 – 2006 school year an estimated 150 (79 of these students completed the LPN portion of their ladder program) completed the LPN program.

Registered Nurse Programs

Student Enrolment and Admission Slots

Table 4 indicates that 70% (210) of qualified applicants for the AS programs were not enrolled. 27% (45) of qualified applicants for pre-licensed BS programs at public institutions were not enrolled and 7% (12) did not take up the offer to enroll; and 63% (791) of qualified applicants to private institutions did not take up the offer to enroll.

TABLE 4: AS AND BS PROGRAMS APPLICATIONS, CAPACITY, AND ENROLLMENT FOR 2005 - 2006

	AS Programs	BS Programs**
Number of applicants	369	1607
Number of applicants meeting minimum admission requirements	300	1479
Number of students newly enrolled (admitted during 2005 -2006 and began classes)	90	628
Number of qualified applicants not enrolled	210	851 ⁺⁺
Number of admission slots		
Public	90	139
Private	No limit set	No limit set
Number of students newly enrolled (admitted during 2005 – 2006 and began classes)		
Public	90	126
Private	n/a [*]	502
Number of unfilled slots		
Public	0	13 [#]

**includes RN to BS program applicants; ⁺⁺ includes applicants who did not take up an offer to enroll (n=806); ^{*} n/a = not applicable; [#] number of admission slots in RN to BS program unfilled

In the 2005 - 06, ninety admission slots were available for students seeking an AS in public institutions and 100% were newly enrolled in the AS program (Table 4). Table 4 also shows an estimated 113 admission slots for pre-licensed students seeking a BS and 26 admission slots for RN to BS were available in public institutions in 2005-06. 100% (113) students were newly enrolled in the pre-licensed BS program. Whilst the private institutions do not cap student admissions they do face similar challenges experienced by the public institutions offering nursing programs. However, 9% (13) of the admission

AS and BS Nursing Student Demographics

Table 5 identifies that males made up 17% of the student population in the registered nursing programs. The distribution of students by race/ethnicity shows a high number of Asians and Caucasians across programs, with a strong Filipino and Japanese representation in the AS and BS programs. In the undergraduate programs, the BS programs have the highest percentage of students under the age of 25 years. AS programs have a higher percentage of students over the age of 25 compared to the BS programs.

TABLE 5: DEMOGRAPHIC CHARACTERISTICS OF NURSING STUDENTS IN REGISTERED NURSE PROGRAMS, 2005 -2006

	AS Students	BS Students	Registered Nurse Program Students Total
	Number (%)	Number (%)	Number (%)
Gender:			
Female	185 (79%)	1,621 (84%)	1,806 (83%)
Male	48 (21%)	316 (16%)	364 (17%)
Gender (Total)	233 (100%)	1,937 (100%)	2,170 (100%)
Race/Ethnicity:			
African-American	1 (<1%)	52 (3%)	53 (3%)
Caucasian	55 (24%)	433 (23%)	488 (23%)
Asian (<i>please break out</i>)	91 (39%)	1095 (58%)	1186 (56%)
Chinese	8	20	
Filipino	39	96	
Japanese	31	43	
Korean	10	5	
Other Asian	3	5	
Native Hawaiian	23 (10%)	172 (9%)	195 (9%)
Pacific Islander (<i>please break out</i>)	0	5 (<1%)	5 (<1%)
Samoan	0	4	
Other Pacific Islander	0	1	
American Indian/Native Alaskan	0	13 (<1%)	13 (<1%)
Mixed (<i>2 or more races</i>)	59 (25%)	40 (2%)	99 (5%)
Some Other Race	3 (1%)	0	3 (<1%)
Hispanic	1 (<1%)	74 (4%)	75 (4%)
Race/Ethnicity (Total)	233 (100%)	1884 (97%)	2117 (98%)
Age:			
18-21	14 (6%)	525 (27%)	539 (25%)
22-24	28 (12%)	469 (24%)	497 (23%)
25-29	64 (27%)	438 (23%)	502 (23%)
30-34	53 (23%)	283 (15%)	336 (15%)
35-39	32 (14%)	120 (6%)	152 (7%)
40-44	20 (9%)	57 (3%)	77 (4%)
45-49	14 (6%)	31 (2%)	45 (2%)
50-54	4 (2%)	5 (<1%)	9 (<1%)
55-59	3 (1%)	8 (<1%)	11 (<1%)
60+	1 (<1%)	1 (<1%)	2 (<1%)
Age (Total)	233 (100%)	1937 (100%)	2170 (100%)

Graduates in AS and BS Programs

121 (56 completed the AS portion of their ladder program) undergraduates received an AS and 302 (19 of these students had completed the RN to BS program) received a BS degree

Graduate Nursing Programs

Student Enrolment and Admission Slots

As shown in Table 6, 29% (29) of qualified applicants were not enrolled into the Master programs and 31% (5) into the PhD program.

TABLE 6: GRADUATE PROGRAM APPLICATIONS, CAPACITY, AND ENROLLMENT FOR 2005 - 2006 SCHOOL YEAR

	MSN programs	PhD programs
Number of applicants	117	12
Number of applicants meeting minimum admission requirements	101	16
Number of students newly enrolled (admitted during 2005 -2006 and began classes)	72	11
Number of qualified applicants not enrolled	29	5
Number of admission slots		
Public	No limit specified	12
Private	No limit	n/a *
Number of students newly enrolled (admitted during 2005 – 2006 and began classes)		
Public	41	11
Private	31	0
Number of unfilled slots		
Public	0	1

* n/a = not applicable

MSN and PhD Student Demographics

The number of graduate nursing students by gender, race/ethnicity, and age is shown in Table 7 for each type of nursing education program, based on the data available.

Table 7 identifies that males made up 10% of the graduate nursing programs student population. The distribution of students by race/ethnicity shows a high number of Asians and Caucasians across programs, with a strong Filipino and Japanese representation in the MSN programs and a strong Japanese representation in the PhD program. For the graduate programs, the percentage of students in older age brackets is higher for both MSN and PhD students.

TABLE 7: DEMOGRAPHIC CHARACTERISTICS OF NURSING STUDENTS IN GRADUATE PROGRAMS, 2005 -2006

	MSN Students	PhD Students	Graduate Students Total
Gender:			
Female	165 (90%)	28 (88%)	193 (90%)
Male	18 (10%)	4 (12%)	22 (10%)
Gender (Total)	183 (100%)	32 (100%)	215 (100%)
Race/Ethnicity:			
African-American	4 (2%)	1 (3%)	5 (2%)
Caucasian	75 (42%)	16 (50%)	91 (43%)
Asian (<i>please break out</i>)	67 (38%)	10 (32%)	77 (37%)
Chinese	4	2	
Filipino	23	3	
Japanese	18	5	
Korean	4	0	
Other Asian	3	0	
Native Hawaiian	13 (7%)	1 (3%)	14 (7%)
Pacific Islander (<i>please break out</i>)	3 (2%)	2 (6%)	5 (2%)
Samoan	1	0	
Other Pacific Islander	2	2	
American Indian/Native Alaskan	0	0	0
Mixed (<i>2 or more races</i>)	5 (3%)	0	5 (2%)
Some Other Race	2 (1%)	0	2 (1%)
Hispanic	9 (5%)	2 (6%)	11 (5%)
Race/Ethnicity (Total)	178 (97%)	32 (100%)	210 (98%)
Age:			
18-21	7 (4%)	0	7(3%)
22-24	13 (7%)	0	13 (6%)
25-29	37 (20%)	1 (3%)	38 (18%)
30-34	27 (15%)	3 (9%)	30 (14%)
35-39	36 (20%)	1 (3%)	37 (18%)
40-44	26 (14%)	7 (22%)	33 (15%)
45-49	23 (13%)	6 (19%)	29 (13%)
50-54	8 (4%)	12 (38%)	20 (9%)
55-59	6 (3%)	0	6 (3%)
60+	0	2 (6%)	2 (1%)
Age (Total)	183 (100%)	32 (100%)	215 (100%)

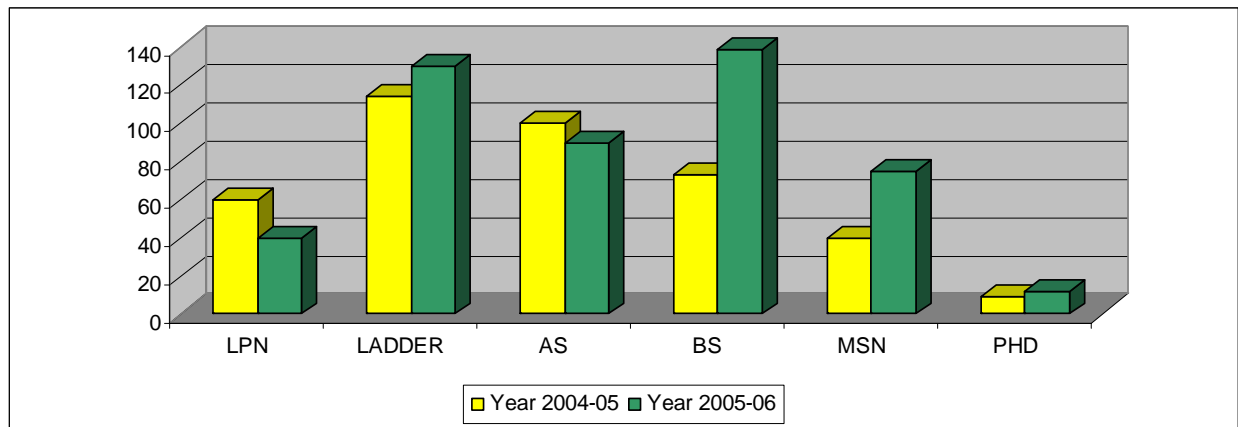
Graduates in the MSN and PhD Programs

A total of 36 postgraduates completed a Masters or PhD in nursing. Of these, 28 received a Master in nursing degree and 8 received a PhD in nursing.

Comparison of Students by School Year

As shown in Figure 1, the number of admission slots in public institutions increased in the ladder programs, BS programs, and the MSN programs.

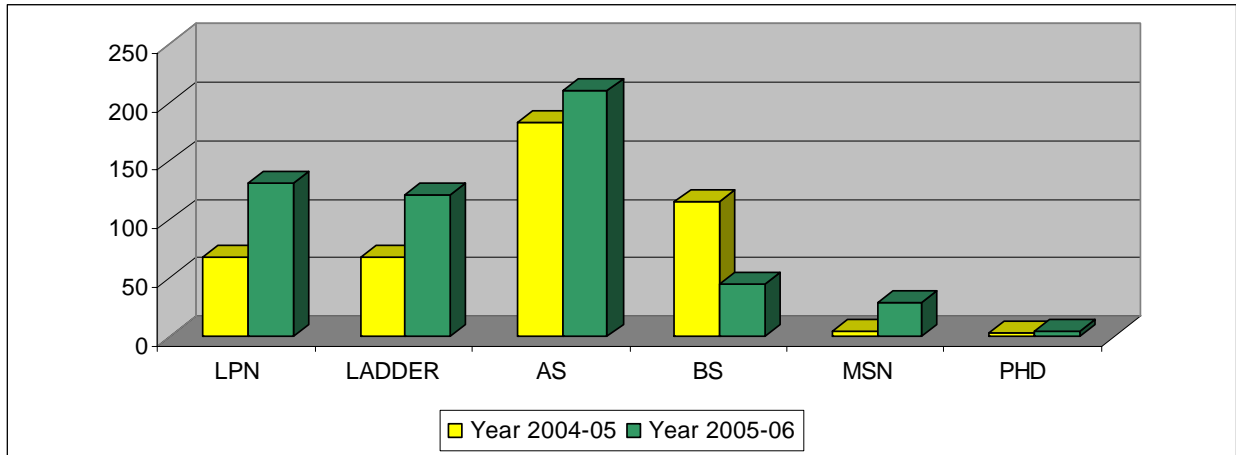
Figure 1: Comparison in Number of Admission Slots in Public Institutions by School Year



	LPN	LADDER	AS	BS	MSN	PHD	TOTAL
Year 2004-05	60	114	100	73	40	9	396
Year 2005-06	40	130	90	139	75	12	486

Figure 2 shows the number of qualified applicants not being enrolled in programs are higher for the LPN, Ladder, and AS programs in the 2005-06 school year compared to the 2004-05 school year. Conversely, applicants not enrolled into the public institutions BS programs have reduced.

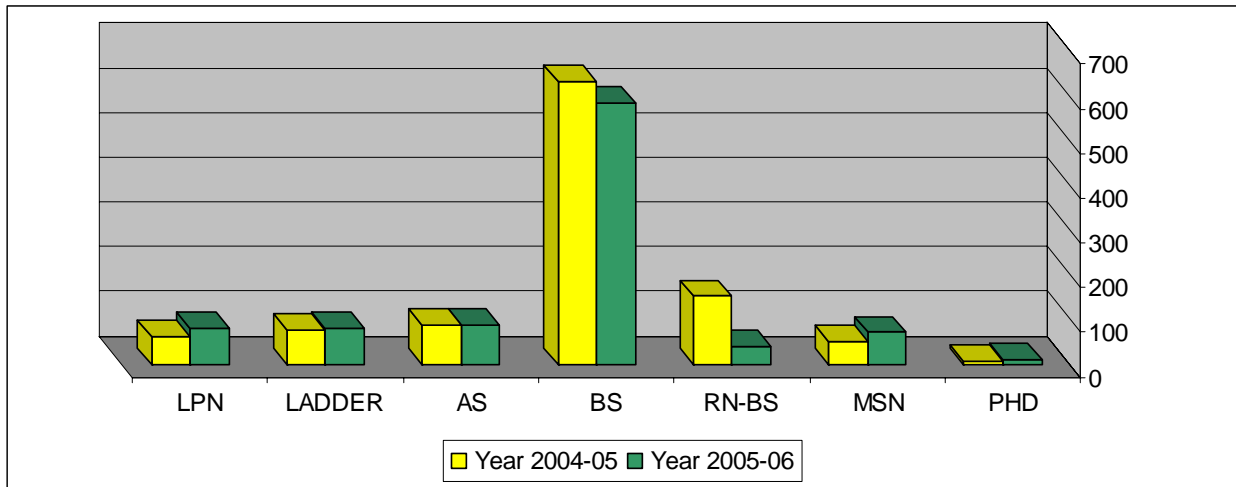
Figure 2: Number of Qualified Applicants not Enrolled in Public Institutions by School Year



	LPN	LADDER	AS	BS	MSN	PHD	TOTAL
Year 2004-05	68	68	183	116	5	3	443
Year 2005-06	131	122	210	45	29	5	542

As shown in Figure 3, nursing students newly enrolled have declined in the BS programs. However, numbers of newly enrolled students have increased slightly in the LPN and MSN programs.

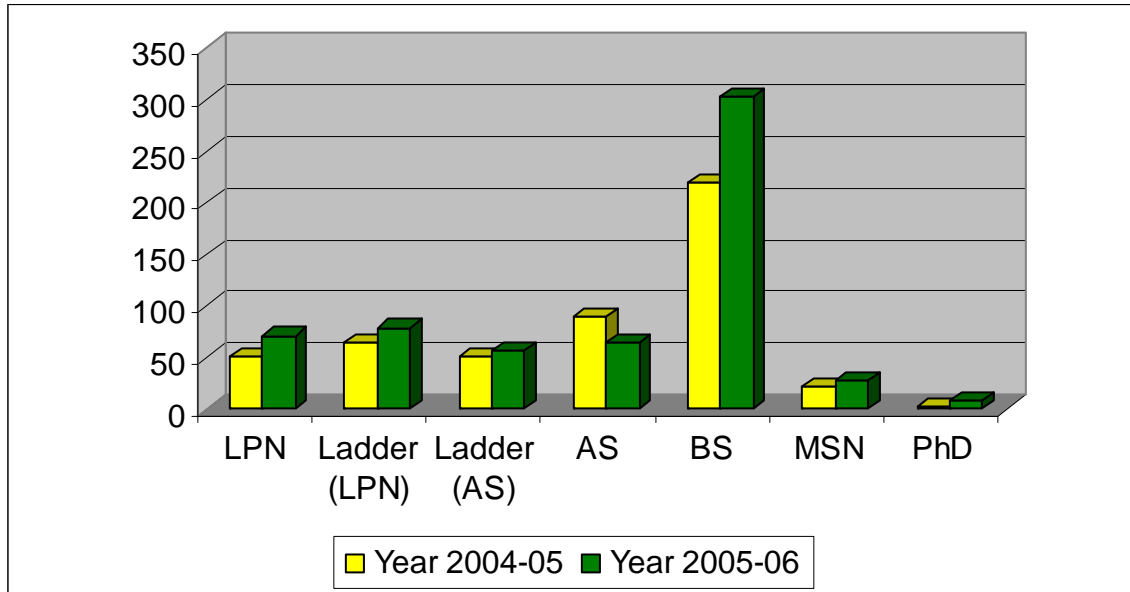
Figure 3: Comparison in Number of Students Newly Enrolled in Nursing Programs by School Year



	LPN	LADDER	AS	BS	RN-BS	MSN	PHD	TOTAL
Year 2004-05	63	79	90	634	153	53	9	1,081
Year 2005-06	81	82	90	587	41	72	11	964

Figure 4 reveals the number of nursing students graduating in the BS programs has increased between school years 2004-05 and 2005-06. However, numbers of AS programs graduates have declined. Numbers of LPN graduates and MSN have also increased.

Figure 4: Comparison in Number of Graduating Students in Nursing Programs by School Year



	LPN	Ladder (LPN)	Ladder (AS)	AS	BS	MSN	PhD	TOTAL
Year 2004-05	51	64	51	89	219	21	2	497
Year 2005-06	71	79	56	65	302	28	8	610

Faculty

Survey respondents were asked to provide the number of full-time faculty positions, the number of full-time faculty vacancies, the number of adjunct faculty positions, and the number of adjunct faculty vacancies. The responses can be seen below in Table 8. Based on the data provided, the overall vacancy rate for full-time faculty positions in nursing education programs is 15 percent; the vacancy rate for adjunct faculty positions is 0 percent. Data continues to suggest a higher percentage of unfilled full-time faculty positions compared to adjunct faculty positions.

TABLE 8: NUMBER OF FACULTY AND VACANCIES IN HAWAII NURSING EDUCATION PROGRAMS, 2005 – 2006

Category	Number
Filled full-time faculty positions	133
Filled full-time faculty vacancies (open positions that the program is actively trying to fill)	20
Filled adjunct faculty positions	149
Adjunct faculty vacancies (open positions that the program is actively trying to fill)	0

Survey respondents were also asked to provide demographic information on their full-time and adjunct faculty. All eight institutions provided data on the race/ethnicity and age of full-time faculty and adjunct faculty. Two institutions could not provide race/ethnicity of all or some of faculty.

Faculty Demographics

As shown in Tables 9 and 10:

- 75% of all faculty have achieved a Master in Nursing and 23% a PhD as the highest level of education.
- Of the total faculty population reported, 13% are male with a larger percent of males represented in (17%) adjunct faculty.
- Full-time faculty members are predominantly made up of 72% Caucasian and 16% Asian (with a strong Japanese and Filipino representation in the Asian full-time faculty population).
- Adjunct faculty members are predominantly made up of 58% Caucasian and 32% Asian (with a strong Japanese and Filipino representation).
- A larger percentage of full-time (68%) and adjunct (63%) faculty are 50 years or older.
- A smaller percentage of full-time faculty (8%) and adjunct faculty (12%) are under the age of 40.

TABLE 9: HIGHEST LEVEL OF EDUCATION OF FACULTY, 2005 - 2006

	Number of Full-time faculty	Number of Adjunct faculty
Highest Level of Education:		
Bachelor of Science (Nursing)	4 (3%)	2 (1%)
Master in Nursing	90 (68%)	122 (82%)
PhD / Doctorate	39 (29%)	25 (17%)
Level of Education (Total)	133 (100%)	149 (100%)

TABLE 10: DEMOGRAPHIC CHARACTERISTICS OF FACULTY, 2005 - 2006

	Number of Full time faculty	Number of Adjunct faculty	Faculty Total
Gender:			
Female	125 (94%)	124 (83%)	249(88%)
Male	8 (6%)	25 (17%)	33 (12%)
Gender (Total)	133 (100%)	149 (100%)	282 (100%)
Race/Ethnicity:			
African-American	1 (<1%)	2 (2%)	3 (1%)
Caucasian	95 (72%)	70 (58%)	165 (65%)
Asian (<i>break out below</i>)	21 (16%)	38 (32%)	59 (23%)
Chinese	3	2	
Filipino	7	7	
Japanese	7	9	
Korean	0	1	
Other Asian	0	0	
Native Hawaiian	5 (4%)	3 (3%)	8 (3%)
Pacific Islander (<i>break out below</i>)	1 (<1%)	0	1 (<1%)
Samoan	0	0	
Other Pacific Islander	1	0	
American Indian/Native Alaskan	0	0	0
Mixed (<i>2 or more races</i>)	4 (3%)	4 (3%)	8 (3%)
Some Other Race	0	0	0
Hispanic	5 (4%)	3 (3%)	8 (3%)
Race/Ethnicity (Total)	132 (99%)	120 (81%)	252 (89%)
Age Group:			
24 and under	0	0	0
25-29	0	1 (<1%)	1 (<1%)
30-34	3 (2%)	5 (4%)	8 (3%)
35-39	7 (5%)	9 (8%)	16 (6%)
40-44	8 (6%)	13 (11%)	21 (8%)
45-49	24 (18%)	17 (14%)	41 (16%)
50-54	28 (21%)	28 (23%)	56 (22%)
55-59	34 (26%)	28 (23%)	62 (24%)
60-64	21 (16%)	14 (12%)	35 (14%)
65-69	5 (4%)	4 (3%)	9 (4%)
70+	2 (2%)	3 (3%)	5 (2%)
Age (Total)	132 (99%)	122 (82%)	254 (90%)

Issues Affecting Program Capacity

Survey respondents were asked which, if any, of the following issues are of concern for their program during the 2005-06 school year. Respondents reported most often difficulty filling faculty positions, followed by the lack of available clinical sites for clinical placements for nursing students, and the lack of classroom space. The predominant issues identified by the institutions surveyed indicate

- Five out of eight programs report difficulty filling full-time faculty positions and
- Five programs report a lack of clinical sites for student clinical placements and a lack of faculty for clinical placements.

Table 11 highlights the percentage of nursing programs reporting a lack of resources to run programs.

TABLE 11: PERCENTAGE OF NURSING PROGRAMS LACKING RESOURCES, 2005 - 2006

	Full-time Faculty	Clinical sites for clinical placements	Faculty for clinical sites**	Classroom facilities
Percent of nursing programs reporting lack of resources	63%	63%	63%	50%

** Access to clinical sites such as hospitals, long-term care facilities, outpatient centers, and home & hospice care agencies

Of those nursing programs reporting difficulty in filling fulltime faculty positions, the frequency of difficulty in filling the following specialty areas was; medical/surgical 50%, pediatrics 38%, obstetrics 25%, and mental health 25%.

Although no vacancies were reported by nursing programs some programs report difficulty in filling adjunct faculty positions, the frequency of difficulty in filling the following specialty areas was; medical/surgical 38%, pediatrics 38%, mental health 38%, and obstetrics 13%.

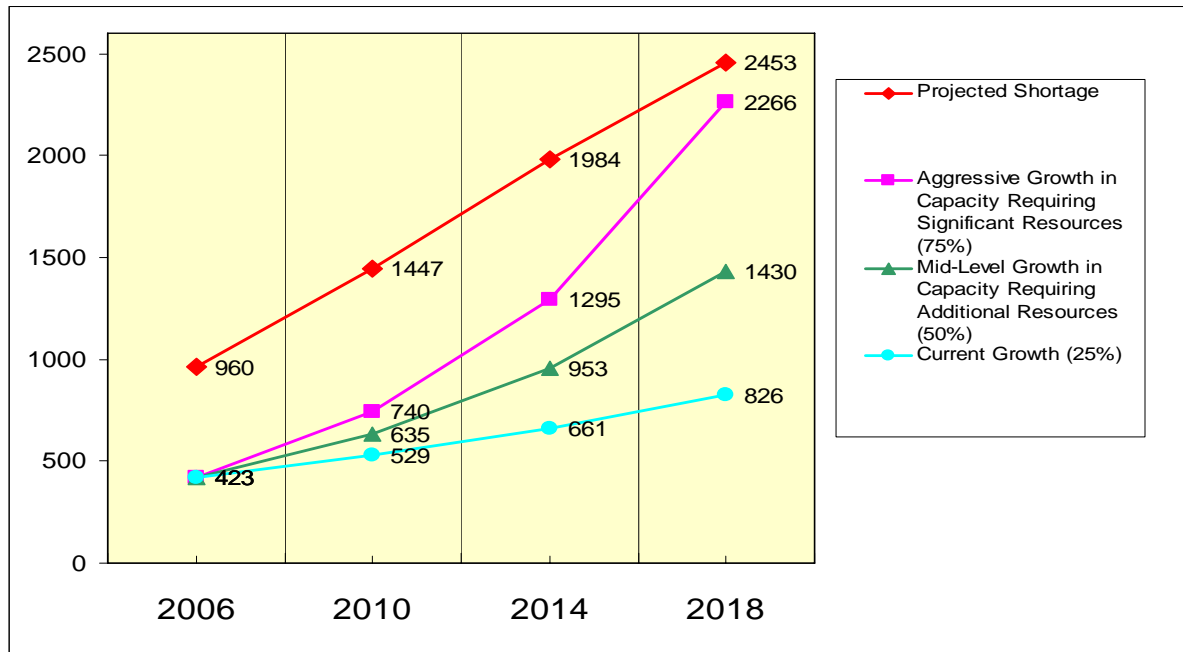
Discussion

In 2005 the Hawaii State Legislature supported funding for nine additional faculty positions for UH nursing programs and \$20,000 in scholarships and loans for students. Comparisons between 2004-05 school year and 2005-06 year indicate the number of qualified applicant not offered a slot in the BS programs have dropped however remain high in AS programs.

There continues to be more qualified applicants who are not being enrolled into programs. The exception is the BS programs offering the RN to BS program, which report fewer applicants than slots available. The ladder programs report not only more qualified applicants than the number of admission slots, but also that a number of available slot go unfilled. A number of factors may contribute to difficulties filling admission slots in the ladder and RN to BS programs. These may include factors related to the immediate capacity of the program (e.g., lack of availability of faculty, facilities, or clinical placement sites to support the approved admission slots), to factors related to the applicants (e.g., too few qualified applicants, affordability of the program for the applicant, enrollment of the applicant in another program), or to a combination of factors. The explanation may differ for different education institutions.

Between 2006 and 2018, demand for RNs in Hawaii is expected to grow by 24%, while supply of RNs is expected to grow by 7.1%. In relative terms, the shortfall in demand will increase from about 11% to 23%. The supply of registered nurses is said to be dependent upon the number of new nursing graduates entering the profession, and the number of existing nurses remaining in the workforce.⁸ Projected RN workforce figures for Hawaii 2005 – 2018 indicate the state has a current shortage of 960 nurses. This is projected to climb to 1,447 by 2010, 1,984 by 2014, and 2,453 by 2018. As Figure 5 demonstrates, nursing programs are going to have to experience an aggressive growth in capacity to produce enough graduates to significantly impact the shortage.

Figure 5: The Projected Shortage and Growth in Educational Capacity to Meet Need



Conclusion

The immediate capacity of nursing education programs to accept students is determined by a number of different factors such as the availability of faculty, facilities, and clinical placement opportunities. Survey findings related to faculty in Hawaii's nursing programs indicates that 68% of fulltime faculty are 50 years or older and the vacancy rates for fulltime faculty positions in nursing education programs are 15%.

Programs such as BS in nursing over the last few years have seen an increase in the number of students enrolled and graduating. However, in the 2005-06 school year, the number of qualified student applicants not being enrolled continues to be significant. According to the aggregate data available for the nursing education programs at these institutions:

- LPN programs report 62% (131) of qualified applicants were not enrolled.
- Ladder programs report 60% (122) of qualified applicants were not enrolled.
- ADN programs report 70% (210) of qualified applicants were not enrolled.
- Pre-licensed BSN programs report 27% (45) of qualified applicants to public institutions were not enrolled.

- MSN programs report 29% (29) of qualified applicants were not enrolled.
- PhD programs report 31% (5) of qualified applicants were not enrolled.

Nursing programs cannot increase current production without continuing to increase nursing faculty and develop and implement measures that redesign how we do business. One such measure in response to education capacity issues is the University of Hawaii statewide nursing consortium. The undergraduate nursing curriculum and learning strategies is being redesigned to increase flexibility and accessibility across the UH system. How this initiative will impact capacity and the supply of nurses requires evaluation on implementation.

In 2006 the Hawaii State Legislature supported funding for seventeen additional faculty positions for UH nursing programs. This further increase in faculty will aid in increasing enrolments by approximately 30%. However further policy measures and strategies are required to adequately address the growing nursing shortage in Hawaii.

References

1. Health Resources and Services Administration. 2004 National Sample Survey of Registered Nurses: Preliminary Findings. Washington. Washington, DC: U.S. Department of Health & Human Services, 2004.
2. Staiger D, Auerbach D, Buerhaus P. Expanding career opportunities for women and the declining interest in nursing as a career... third of a four-part series. *Nursing Economics* 2000;**18**(5):230-236.
3. Buerhaus P, Staiger D, Auerbach D. Implications of an aging registered nurse workforce. *Journal of the American Medical Association* 2000;**283**:1948-2954.
4. Aiken L, Clarke S, Sloane D. Nurses' report on hospital care in 5 countries *Health Affairs* 2001;**20**:43-45.
5. American Association of Colleges of Nursing. National shortage fact sheet. Washington, DC: American Association of Colleges of Nursing 2004.
6. American Association of Colleges of Nursing. Faculty Shortages in Baccalaureate and Graduate Nursing Programs: Scope of the Problem and Strategies for Expanding the Supply. Washington DC: American Association of Colleges of Nursing, 2003.
7. Michigan Center for Nursing. Survey of Nursing Education Programs: 2002-2003: Michigan Center for Nursing, (accessed 06/21/07 <http://www.michigancenterfornursing.org/mimages/edprograms.pdf>), 2005: 15-20.
8. Buerhaus PI, Donelan K, Ulrich BT, Norman L, Dittus R. State of the registered nurse workforce in the United States. *Nursing Economics* 2006;**24**(1):6-12.

