

# **MARYLAND NURSING PROGRAM CAPACITY STUDY**

**Requested by Senate Bill 511 (Chapter 487, Acts of 2005)**

**Prepared by**

**The Maryland Higher Education Commission (MHEC) in  
collaboration with The Maryland Board of Nursing (MBON)**

**September 2006**

## EXECUTIVE SUMMARY

- The Maryland Higher Education Commission (MHEC) conducted the *Maryland Nursing Program Capacity Study*, in collaboration with the Maryland Board of Nursing (MBON), in accordance with Senate Bill 511 (Chapter 487, Acts of 2005). As required, the study addresses: (1) the demand for and capacity of nursing programs offered by Maryland higher education, and (2) the availability of financial aid and other incentives to encourage individuals to pursue nursing education. In addition, the report provides recommendations designed to expand the capacity of Maryland's nursing programs and increase the availability of nurses and nurse faculty through financial aid and other financial incentives.
- The critical unmet demand for nurses in Maryland is well documented. Described in this report are the following significant trends identified in three recent studies of the supply and demand for nurses in Maryland.
  - First, there is an increasing demand for registered nurses (RN), due primarily to the expanding healthcare needs of an aging Maryland citizenry.
  - Second, a substantial gap between supply and demand is identified in each report.
  - Third, although the most recent projections reflect progress made to address the nursing shortage in Maryland, much remains to be done to close the gap.
- Maryland's higher education institutions have responded to the demand for nurses by significantly increasing the supply of nursing graduates in the past five years. A record 2,612 total nursing graduates were produced in FY 2005. However, there was a reported decrease in production from master's level nursing programs that may impact the supply of eligible nurse faculty and limit the ability of nursing programs to expand enrollments.
- At a time when there is a critical unmet demand for registered nurses, Maryland RN programs are admitting and enrolling less than half of the qualified applicants seeking admission. In Fall 2005, 2,357 qualified applicants were not admitted to RN programs. Seventy-nine percent (79%) of the RN programs met or exceeded their enrollment capacity in Fall 2005. By contrast, most master's level nursing programs did not reach program capacity. In addition, although a master's degree in nursing is a prerequisite for most nursing faculty, many of Maryland's graduate level nursing programs are not designed for the primary purpose of preparing nursing faculty.
- In 2005, the Maryland Higher Education Commission (MHEC) initiated a telephone survey for Maryland's 24 higher education institutions with nursing programs. Topics covered included: (1) the current enrollment capacity of nursing programs; (2) ways to increase the number of nursing graduates by expanding nursing enrollments and improving the graduation rates of nursing programs; and (3) strategies to increase the supply of nursing faculty.
- In a follow-up written survey, Maryland's 24 nursing deans and directors indicated an overwhelming willingness to expand nursing enrollments, *if* sufficient resources were available. Twenty-two (22) responded "yes" to the following question: "*If additional resources were available, would your institution be willing and able to significantly increase enrollments in your nursing program?*" In total, Maryland's institutions reported that they

could enroll an additional 1,245 – 1,299 nursing students, if necessary resources were available.

- Nursing deans and directors reported a significant degree of difficulty in obtaining the additional resources necessary to expand nursing enrollments. However, they also identified strategies to obtain the nurse faculty, clinical sites, and facilities necessary to increase enrollments.
- Data obtained through the Nursing Enrollment Capacity Surveys assisted in the design of the Nurse Support Program II (NSP II), a significant new funding mechanism to increase the supply of qualified nurses in Maryland and the nurse faculty necessary to train these nurses. Under NSP II, an estimated \$8.8 million will be available annually for ten years to fund many of the strategies to increase nursing enrollments and improve nursing student retention that were identified in the surveys by Maryland’s nursing deans and directors.
- Recent initiatives are increasing the supply of nurses as well as the nurse faculty needed to prepare additional nurses. Many of the funding initiatives are described in this report including: (1) State Nursing Scholarships, (2) Workforce Shortage Student Assistance Repayment Program, (3) Janet L. Hoffman Loan Assistance Repayment Program, (4) Teach for the Health of It, (5) Sallie Mae’s Care for Maryland Program, (6) Health Personnel Shortage Incentive Grant Program (7) Nurse Support Program I, and (8) Nurse Support Program II. Nonetheless, a nursing crisis remains.
- Based on the findings of the *Maryland Nursing Program Capacity Study*, the Maryland Higher Education Commission (MHEC) is proposing the following recommendations to increase nursing education capacity and modify financial incentives to increase the supply of nurses and nurse faculty:
  1. Increase access to nurse educator programs throughout the State.
  2. Appoint an appropriate group to develop a statewide campaign to recruit individuals to become nurse faculty.
  3. Charge presidents of higher education institutions with nursing programs to address the nurse faculty salary issue.
  4. Support efforts to maximize the utilization of clinical sites for nursing students in Maryland.
  5. Explore revising the Health Personnel Shortage Incentive Grant (HPSIG) Program to focus on the areas of greatest shortage.
  6. Implement the Workforce Shortage Student Assistance Grant Program and request additional funding to increase scholarship award amounts.

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## I. INTRODUCTION

The Maryland Higher Education Commission (MHEC) is required by Senate Bill 511 (Chapter 487, Acts of 2005) to conduct the *Maryland Nursing Program Capacity Study*, in collaboration with the Maryland Board of Nursing (MBON). In addition, MHEC is to make recommendations designed to expand the capacity of Maryland's nursing programs and increase the availability of nurses and nurse faculty through financial aid and other financial incentives. The legislation states:

*The Maryland Higher Education Commission, in collaboration with the State Board of Nursing, shall review:*

*(1) the demand for and capacity of higher education nursing programs in the State; and*

*(2) the availability of financial aid and other incentives that encourage individuals to pursue nursing education programs, particularly those that focus on the need to address the nursing faculty shortage.*

*The Maryland Higher Education Commission shall make recommendations to the Governor and, the General Assembly and, in accordance with 2-1246 of the State Government Article, the General Assembly regarding:*

*(1) the need to increase nursing education capacity at higher education institutions in the State; and*

*(2) any modifications needed to available financial aid and other incentives to increase the availability of nurses, particularly nurse educators.*

As required, the following nursing capacity study was prepared by the Maryland Higher Education Commission, in collaboration with the Maryland Board of Nursing. The report is organized into the four sections identified below:

- I. Introduction.
- II. Demand for and Capacity of Higher Education Nursing Programs in Maryland.
- III. Availability of Financial Aid and Other Incentives to Encourage Individuals to Pursue Nursing Education, Particularly Those Addressing the Nursing Faculty Shortage.
- IV. Recommendations to:
  - Increase Nursing Education Capacity; and
  - Modify Financial Aid and Other Incentives to increase the Availability of Nurses, Particularly Nursing Educators.

As described in this report, Maryland is facing an increasing demand for nurses, in large part, because of the advancing age of Maryland's citizenry and their need for expanded healthcare

services. The demand for nurses and Maryland's higher education nursing programs continues to grow. However, the gap between supply and demand for nurses is narrowing, due to significant collaborative efforts by higher education, the State, and others to address the nursing shortage. Recent initiatives are increasing the supply of nurses as well as the nurse faculty needed to prepare additional nurses. Many of the funding initiatives are described in this report including: (1) State Nursing Scholarships, (2) Workforce Shortage Student Assistance Repayment Program, (3) Janet L. Hoffman Loan Assistant Repayment Program, (4) Teach for the Health of It, (5) Sallie Mae's Care for Maryland Program, (6) Health Personnel Shortage Incentive Grant Program (7) Nurse Support Program I, and (8) Nurse Support Program II. Nonetheless, a nursing crisis remains.

Building on the significant work that is underway, the final section of this report provides additional recommendations to:

- Increase nursing program capacity; and
- Modify financial aid and other financial incentives to increase the availability of nurses, particularly nursing educators.

## II. DEMAND FOR AND CAPACITY OF NURSING PROGRAMS OFFERED BY MARYLAND HIGHER EDUCATION

### A. UNMET NEED FOR REGISTERED NURSES

The critical unmet demand for nurses in Maryland is well documented. Summarized below are findings from three recent studies of the supply and demand for nurses in the State. In combination, the reports identify significant trends:

- First, there is an increasing demand for registered nurses due primarily to the expanding healthcare needs of an aging Maryland citizenry. Each successive report projects a higher demand -- 62,333 registered nurses in 2012, and 74,611 in 2016.
- Second, a substantial gap between supply and demand is identified in each report even though they were completed in different years and utilized somewhat different analytical methodologies.
- Third, although the demand for registered nurses continues to grow, the gap between supply and demand is beginning to narrow due, in large part, to significant efforts being made within the State to increase the supply of registered nurses, particularly nursing graduates from Maryland's higher education institutions. Based on different scenarios, the nursing shortage is projected to be between 11,097 and 20,091 in 2012 compared to 2,512 and 15,536 in 2016. Although the most recent projections reflect progress made to address the nursing shortage in Maryland, much remains to be done to close the gap.

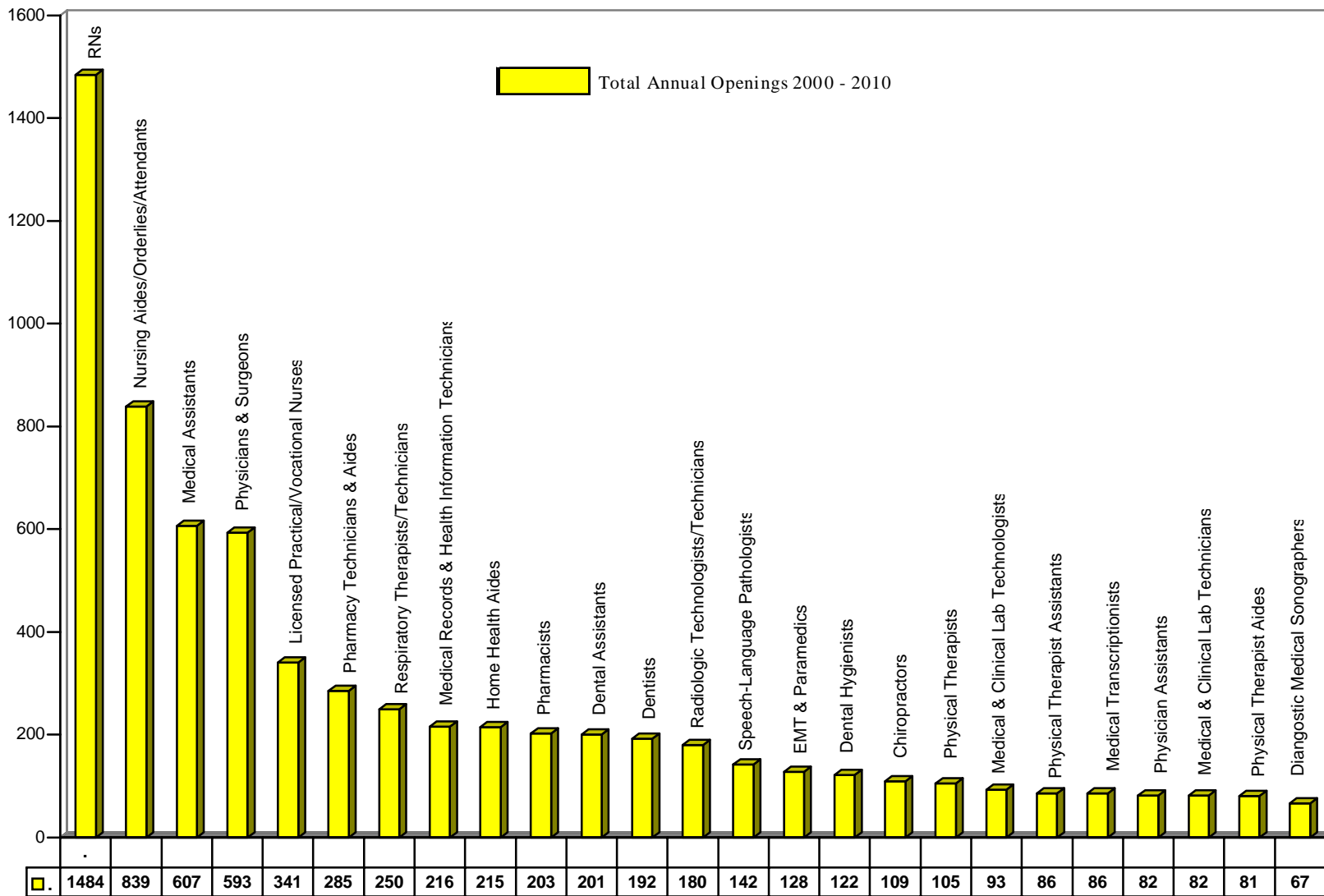
#### 1. “Maryland’s Top 25 Demand Healthcare Occupations”:

A substantial demand for nurses is evident from the Maryland 2000 – 2010 Occupational Projections presented in this study prepared by the Maryland Higher Education Commission (MHEC) in collaboration with the Department of Labor, Licensing, and Regulation (DLLR). The following findings are reported in this study:

- From 2000 – 2010, the projected demand for registered nurses (RN) far exceeds that of any other healthcare occupation in Maryland. Registered nurse is the top demand healthcare occupation in Maryland whether measured by 2010 employment, employment growth, or total annual openings. As illustrated by **Figure 1**, projected annual openings for registered nurses are 22 times greater than for diagnostic medical sonographers, the 25<sup>th</sup> ranked healthcare occupation. Furthermore, a gap is reported between the projected total annual openings for RNs in 2002 and the number of graduates produced by Maryland's registered nursing programs in 2002.
- Licensed practical nurses (LPN) is ranked 5<sup>th</sup> among Maryland's top 25 demand healthcare occupations whether measured by 2010 employment, employment growth, or total annual openings. A substantial gap was identified between the supply and demand for licensed practical nurses in 2002.

Figure 1

MARYLAND OCCUPATIONAL PROJECTIONS 2000 – 2010





## 2. “Maryland’s Nursing Shortage: A Workforce Crisis”:

The current shortage of registered nurses in Maryland is projected to worsen significantly over the next decade, according to projections from 2002 – 2012 presented in a study by the Center for Health Workforce Development, University of Maryland, Baltimore. The Center contracted with RESI of Towson University to investigate the current and prospective status of the registered nurse (RN) labor market in Maryland. In the 2003 study, the following findings are reported:

- The demand for registered nurses is projected to increase to 62,333 nurses by 2012.
- A shortage of between 11,097 and 20,091 registered nurses is forecasted by 2012, if actions to increase the supply of new nurses and improve the retention of currently employed nurses are not effective.

In this 2003 report, the projections of supply and demand are based on the following three scenarios pertaining to the projected supply of registered nurses:

- **Optimistic Scenario:** a 0% annual growth in new licensees in order to provide a conservative parameter of growth;
- **Baseline Scenario:** a –10% annual growth rate in new licensees based on RN graduate data; and
- **Pessimistic Scenario:** a –20% annual growth rate in new licensees to provide a reasonable worst case parameter of growth.

**Figures 2 and 3** identify the supply and demand projections under the three scenarios. Even under the optimistic supply scenario, an 11,097 gap is forecast between the supply and the demand for registered nurses in Maryland by 2012.

According to the report, the nursing shortage is caused by the confluence of factors affecting both the supply of nurses and the demand for health care services. These factors include:

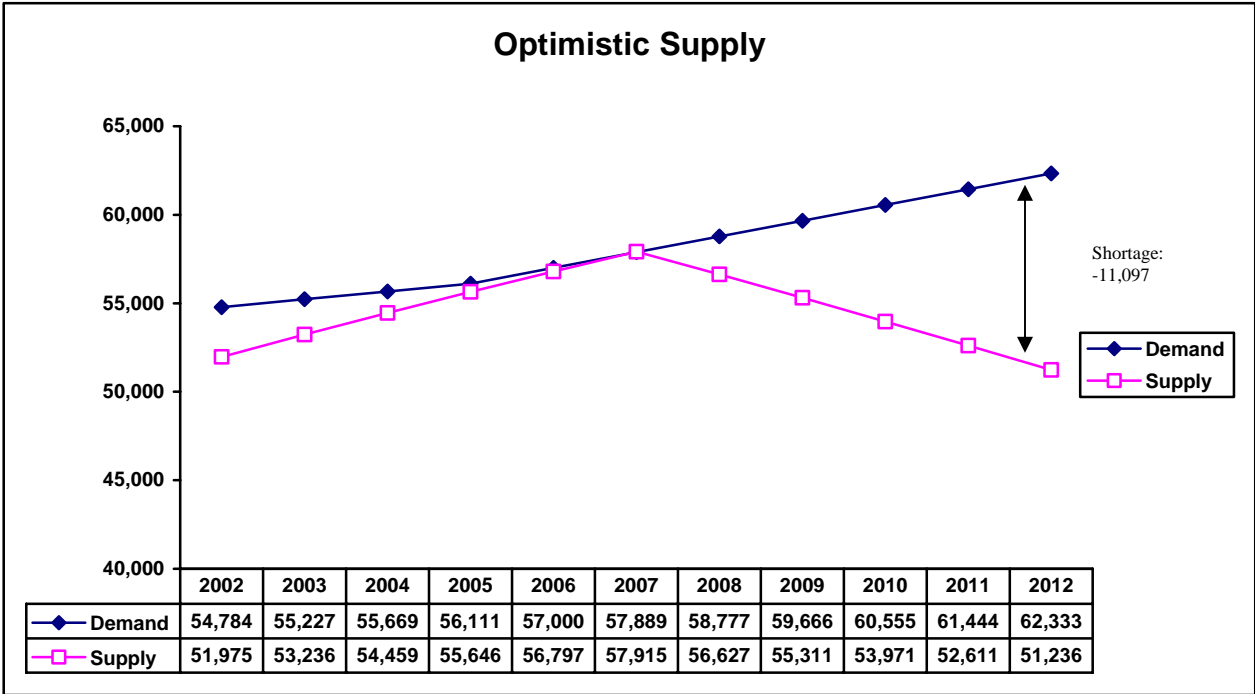
- The aging of Maryland’s general population;
- The aging of Maryland’s nurses;
- The under-representation of minorities and men among Maryland’s registered nurses;
- Nurses leaving the profession because of dissatisfaction with working conditions;
- The impact of nurses’ salary and benefits on the ability to recruit and retain nurses;
- Fewer students graduating from Maryland’s colleges and universities with degrees in nursing;
- Nursing education programs having limited capacity to expand enrollments; and
- Nursing viewed unfavorably by young people making decisions about a career.

Figure 2

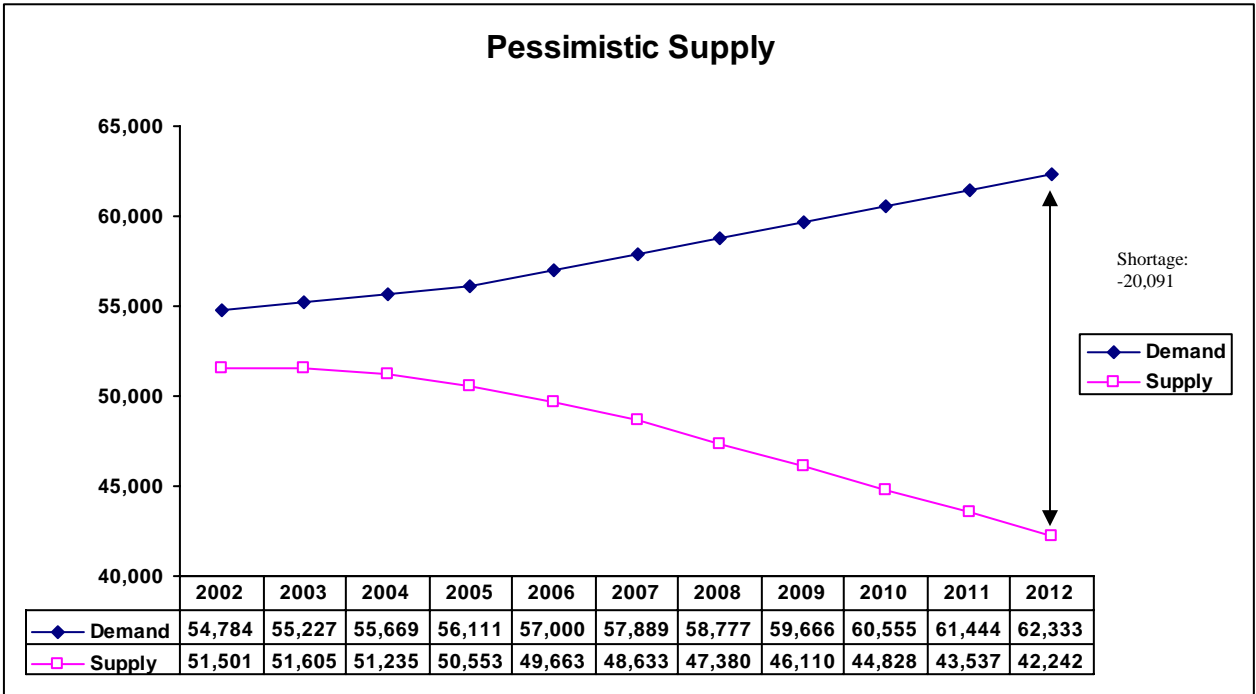
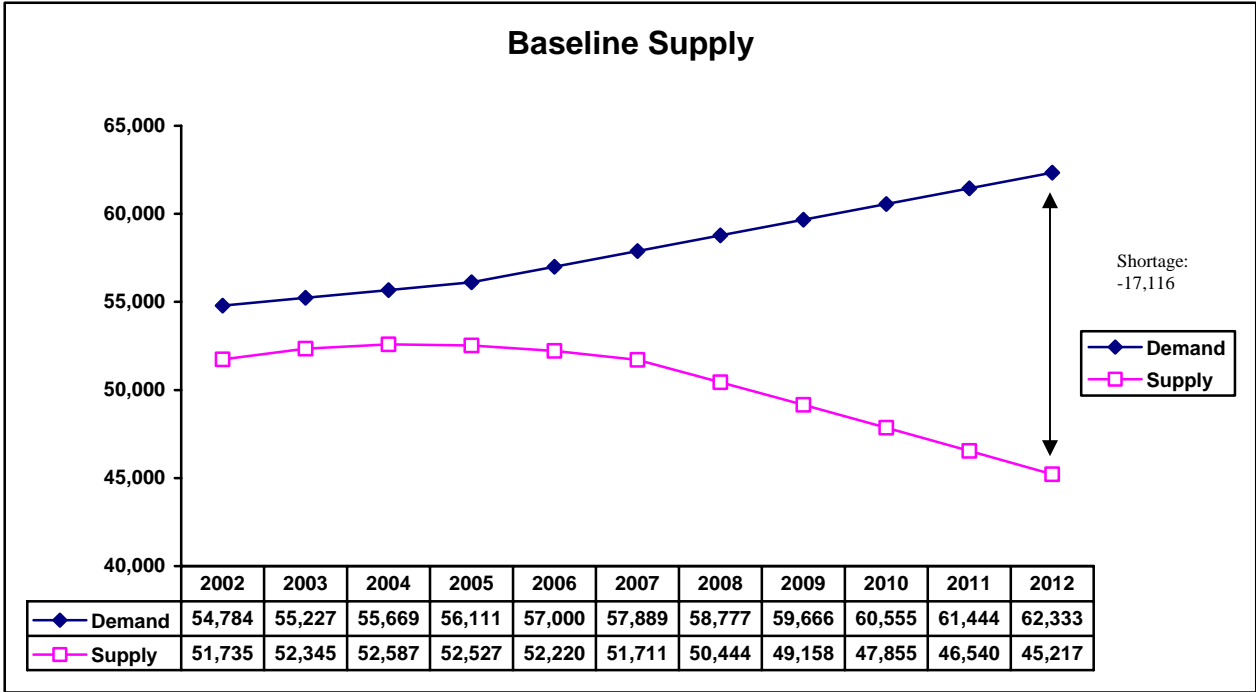
**2012 PROJECTIONS  
SUPPLY AND DEMAND FOR REGISTERED NURSES IN MARYLAND**

	1999-2001*	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Demand	53,985	54,784	55,227	55,669	56,111	57,000	57,889	58,777	59,666	60,555	61,444	62,333
Optimistic Supply	49,010	51,975	53,236	54,459	55,646	56,797	57,915	56,627	55,311	53,971	52,611	51,236
Shortage	-4,975	-2,809	-1,990	-1,210	-466	-203	26	-2,150	-4,355	-6,584	-8,832	-11,097
Baseline Supply	49,010	51,735	52,345	52,587	52,527	52,220	51,711	50,444	49,158	47,855	46,540	45,217
Shortage	-4,975	-3,049	-2,882	-3,082	-3,584	-4,780	-6,178	-8,333	-10,508	-12,700	-14,904	-17,116
Pessimistic Supply	49,010	51,501	51,605	51,235	50,553	49,663	48,633	47,380	46,110	44,828	43,537	42,242
Shortage	-4,975	-3,283	-3,622	-4,434	-5,558	-7,337	-9,256	-11,397	-13,556	-15,727	-17,907	-20,091

\*Historic data: three-year average.



**2012 PROJECTIONS  
SUPPLY AND DEMAND FOR REGISTERED NURSES IN MARYLAND**



### 3. “Updated Supply and Demand Projections for Registered Nurses in Maryland”:

In 2006, the Maryland Hospital Association (MHA) contracted with RESI of Towson University to update the 2003 RESI study that was produced in collaboration with and on behalf of the Center for Health Workforce Development, University of Maryland, Baltimore. For this analysis, four scenarios were used to: (1) project the demand for registered nurses from 2006 – 2016 and (2) forecast the gap between the supply and demand for nurses during this period. Because of significant increases in the supply of graduates produced recently by Maryland’s registered nursing programs, the annual growth in new licensees was adjusted significantly upwards from the 2003 study. In the 2006 study, the following scenarios are utilized to calculate supply and demand projections:

- Optimistic Scenario: a 6.4% annual growth in new licensees in order to provide a conservative parameter of growth;
- Baseline Scenario: a 2% annual growth rate in new licensees based on RN graduate data;
- Flat Scenario: a flat growth 0% growth rate in new licensees; and
- Pessimistic Scenario: a –2.4% annual growth rate in new licensees to provide a reasonable worst case parameter of growth.

Using these scenarios, the study reports the following findings:

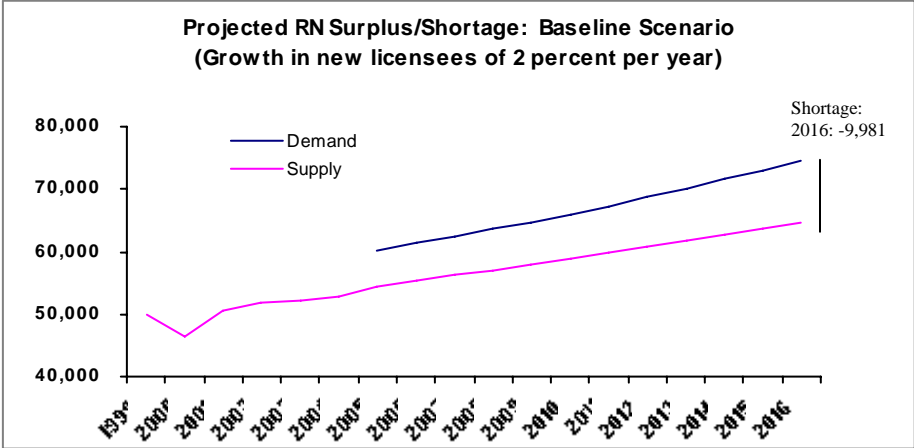
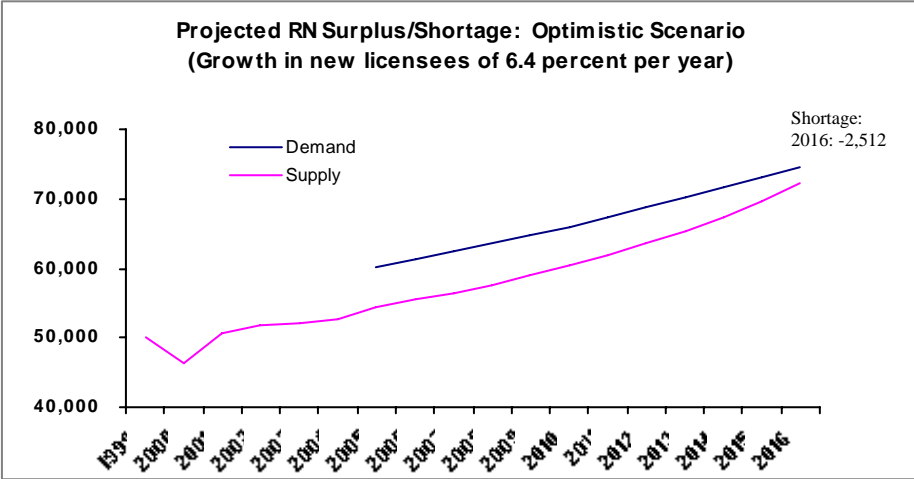
- A projected demand for registered nurses in Maryland of 68,695 nurses by 2012 that is 10% higher than the demand projected in the previous study. By 2016, the demand projections are for 74,611 registered nurses in Maryland.
- Even the most optimistic projections identify a significant gap between the supply and demand for registered nurses in Maryland. As reported in **Figures 4 and 5**, the 2006 study forecasts a shortage of between 2,512 and 15,536 in 2016.
- It is important to note that the size of the projected gap is significantly less than the previous 2003 projections. To a large degree, this reflects the significant progress made from recent initiatives undertaken by higher education institutions, the State, and others to increase the supply of nurses in Maryland.

## 2016 PROJECTIONS SUPPLY AND DEMAND FOR REGISTERED NURSES IN MARYLAND

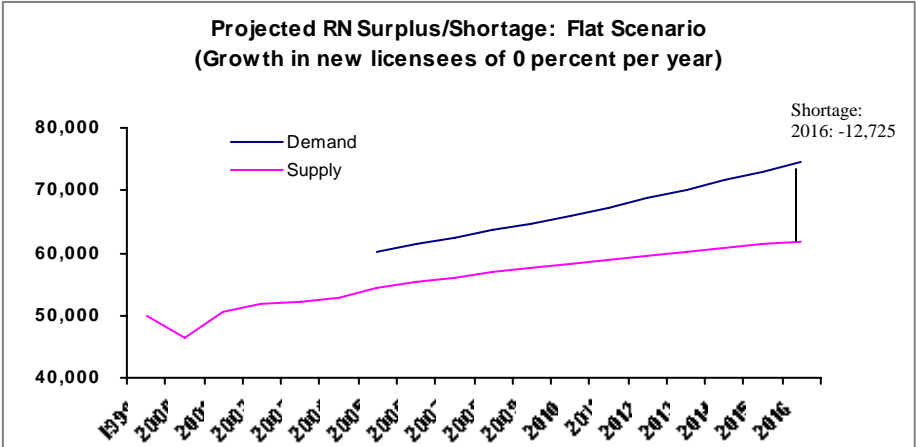
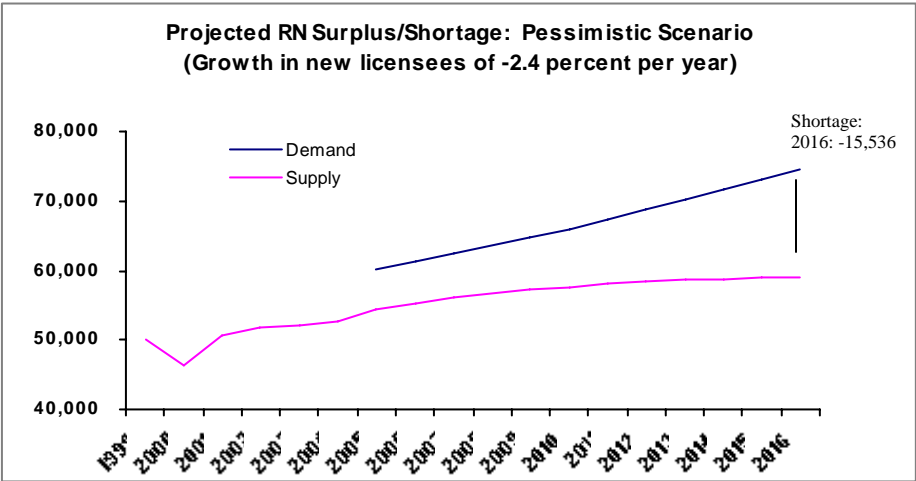
Projected Demand & Supply of RNs in MD

	Demand	Optimistic		Baseline		Pessimistic		Flat	
		Supply	Surplus/ Shortage	Supply	Surplus/ Shortage	Supply	Surplus/ Shortage	Supply	Surplus/ Shortage
1999		49,936		49,936		49,936		49,936	
2000		46,421		46,421		46,421		46,421	
2001		50,674		50,674		50,674		50,674	
2002		51,763		51,763		51,763		51,763	
2003		52,039		52,039		52,039		52,039	
2004		52,714		52,714		52,714		52,714	
2005	60,270	54,362	-5,908	54,362	-5,908	54,362	-5,908	54,362	-5,908
2006	61,377	55,430	-5,947	55,344	-6,033	55,259	-6,119	55,305	-6,072
2007	62,484	56,496	-5,988	56,232	-6,252	55,976	-6,508	56,114	-6,370
2008	63,591	57,663	-5,928	57,120	-6,471	56,608	-6,983	56,882	-6,709
2009	64,698	58,942	-5,756	58,011	-6,687	57,159	-7,539	57,612	-7,086
2010	65,805	60,345	-5,460	58,910	-6,895	57,633	-8,172	58,307	-7,498
2011	67,250	61,885	-5,365	59,819	-7,431	58,034	-9,215	58,970	-8,280
2012	68,695	63,574	-5,121	60,742	-7,953	58,367	-10,328	59,603	-9,091
2013	70,139	65,426	-4,713	61,681	-8,458	58,633	-11,506	60,209	-9,930
2014	71,584	67,455	-4,129	62,641	-8,943	58,838	-12,746	60,791	-10,793
2015	73,029	69,674	-3,354	63,623	-9,406	58,984	-14,045	61,349	-11,680
2016	74,611	72,099	-2,512	64,630	-9,981	59,075	-15,536	61,886	-12,725

\*Supply figures for 1999 through 2005 are actuals based on the number of active RNs in MD



### 2016 PROJECTIONS SUPPLY AND DEMAND FOR REGISTERED NURSES IN MARYLAND



## B. CURRENT CAPACITY OF MARYLAND'S NURSING PROGRAMS

### 1. Maryland Nursing Programs:

Undergraduate and graduate nursing programs are offered by 24 Maryland higher education institutions. This includes 5 public universities, 4 independent colleges and universities, and 15 of Maryland's 16 community colleges. **Figure 6** provides a list of "*Maryland Higher Education Institutions with Nursing Programs – by Educational Segment and Degree Level*".

Licensed Practical Nursing (LPN) Programs: In FY 2006, 13 Maryland community colleges offered the one-year certificate program in licensed practical nursing (LPN). In addition, two new programs will be offered by Sojourner-Douglass College and Anne Arundel Community College beginning in FY 2007.

Registered Nursing (RN) Programs: Registered nursing (RN) programs are offered by 24 institutions including 15 at the Associate Degree in Nursing (ADN) level and 9 at the Bachelor's of Science in Nursing (BSN) level. In addition, 6 institutions offer the RN to BSN Degree that allows RNs with an associate degree to complete their bachelor's degree.

On-line instruction for at least a portion of the ADN degree is available at three community colleges: Chesapeake College, Community College of Baltimore County, and College of Southern Maryland. On-line instruction for a BSN degree is offered at the following Maryland institutions: Salisbury University, Villa Julie College, and University of Maryland, Baltimore.

Graduate Nursing Programs: Graduate degrees in nursing are awarded by 6 Maryland universities. **Figure 7** provides a listing of "*Graduate Nursing Programs by Degree Level by Institution*". Highlighted in bold are nursing education programs. Although a master's degree in nursing is a prerequisite for most nursing faculty, many of Maryland's graduate level nursing programs are not designed for the primary purpose of preparing nursing faculty. One strategy for increasing the supply of nurse faculty may be to modify existing graduate nursing programs by offering nurse educator tracks that include the education courses necessary to prepare nurse faculty.

Easy access to Maryland's graduate nursing programs is not universally available throughout the State, because of the geographic location of institutions with graduate nursing programs. Four of these institutions are located in the Baltimore metropolitan area, one in Prince George's County, and one in Wicomico County. Increased on-line instruction and expanded use of Regional Higher Education Centers (RHEC) to offer graduate level nursing programs may increase access to programs required to prepare nurse faculty. For example, Western Maryland recently gained access to graduate nursing programs when Towson University began offering its MSN program at Hagerstown Regional Higher Education Center.

**MARYLAND HIGHER EDUCATION INSTITUTIONS WITH NURSING PROGRAMS  
(By Educational Segment and Degree Level)**

Higher Education Institutions	Practical Nursing	Registered Nursing (RN)			Graduate Nursing Degree Level	
	Certificate (LPN)	Associate Degree (ADN)	RN to BSN Degree	Bachelor's Degree (BSN)	Master's Degree (MSN/MS)	Doctorate Degree (DSN/PhD)
<b><u>COMMUNITY COLLEGES</u></b>						
Allegany College of Maryland	X	X				
Anne Arundel Community College		X				
Baltimore City Community College	X	X				
Carroll Community College	X	X				
Cecil Community College	X	X				
Chesapeake College	X	X				
Community College of Baltimore County	X	X				
College of Southern Maryland	X	X				
Frederick Community College	X	X				
Hagerstown Community College	X	X				
Harford Community College	X	X				
Howard Community College	X	X				
Montgomery College		X				
Prince George's Community College	X	X				
Wor-Wic Community College	X	X				
<b><u>INDEPENDENT INSTITUTIONS</u></b>						
College of Notre Dame of Maryland			X	X		
Columbia Union College				X		
Johns Hopkins University			X	X	X	X
Villa Julie College			X	X		
<b><u>PUBLIC UNIVERSITIES</u></b>						
Bowie State University			X	X	X	
Coppin State University			X	X	X	
Salisbury University				X	X	
Towson University				X	X	
University of Maryland, Baltimore			X	X	X	X
<b>TOTAL (24)</b>	<b>13</b>	<b>15</b>	<b>6</b>	<b>9</b>	<b>6</b>	<b>2</b>



Figure 7

## GRADUATE NURSING PROGRAMS –BY DEGREE LEVEL BY INSTITUTION

Institutions	Credits	Award	Concentrations
Johns Hopkins University	12	Certificate	Hopkins Business of Nursing
<b>University of MD, School of Nursing</b>	<b>12</b>	<b>Certificate</b>	<b>Teaching in Nursing &amp; Health Professions Certificate Program</b>
<b>Towson University</b>	<b>15</b>	<b>Certificate</b>	<b>Nursing Education</b>
Bowie State University	38	MSN	Community/Public Health
Bowie State University	47	MSN	Primary Care Family Nurse Practitioner
Coppin State University	48	MSN	Family Nurse Practitioner
Johns Hopkins University	42	MSN	Acute Care/Critical Care Nurse Practitioner
Johns Hopkins University	39	MSN	Clinical Nurse Specialist
Johns Hopkins University	36	MSN	Community Health Nursing
Johns Hopkins University	39	MSN	Health Systems Management
Johns Hopkins University	48	MSN	Health Systems Management & Clinical Nurse Specialist
Johns Hopkins University	41	MSN	Primary Care Nursing Adult or Pediatric NP
Johns Hopkins University	55-57	MSN/MBA	MSN/MBA Joint Degree
Johns Hopkins University	60	MSN/MPH	MSN/MPH Joint Degree
Salisbury University	46	MSN	Family Nurse Practitioner
Salisbury University	39	MSN	Health Care Leadership
Salisbury University	46	MSN	Home Health Nursing Clinical Specialist
Towson University	36-42	MS	Advanced Clinician
Towson University	36-42	MS	Clinician - Administrator Transition
<b>Towson University</b>	<b>36-42</b>	<b>MS</b>	<b>Nursing Education</b>
University of MD, School of Nursing	40	MS	Adult Primary Care Nurse Practitioner
University of MD, School of Nursing	46	MS	Advanced Practice Pediatric Nursing - Clinical Nurse Specialist & Acute/Tertiary Care Nurse Practitioner
University of MD, School of Nursing	41	MS	Advanced Practice Pediatric Nursing - Clinical Nurse Specialist & Primary Care Nurse Practitioner
University of MD, School of Nursing	37	MS	Clinical Nurse Leader & Accelerated MS
University of MD, School of Nursing	30-31	MS	Clinical Research Management
University of MD, School of Nursing	35	MS	Community/Public Health Nursing
University of MD, School of Nursing	47	MS	Community/Public Health Nursing -- Emphasis on Environmental Health
University of MD, School of Nursing	52	MS	Family Nurse Practitioner
University of MD, School of Nursing	39	MS	Gerontological Nurse Practitioner
<b>University of MD, School of Nursing</b>	<b>36-42</b>	<b>MS</b>	<b>Health Services Leadership &amp; Management (including Education Focus)</b>
University of MD, School of Nursing	72	MS	Nurse Anesthesia
University of MD, School of Nursing	53	MS	Nurse-Midwifery
University of MD, School of Nursing	39-40	MS	Nursing Informatics
University of MD, School of Nursing	48	MS	Oncology Nursing - Clinical Nurse Specialist/Acute Care Nurse Practitioner
University of MD, School of Nursing	49	MS	Oncology Nursing - Clinical Nurse Specialist/Adult Primary Care Nurse Practitioner
University of MD, School of Nursing	50	MS	Oncology Nursing - Clinical Nurse Specialist/Gerontology Nurse Practitioner
University of MD, School of Nursing	41	MS	Psychiatric-Mental Health Clinical Nurse Specialist/Nurse Practitioner/Adult Focus
University of MD, School of Nursing	42	MS	Psychiatric-Mental Health Clinical Nurse Specialist/Nurse Practitioner/Child and Adolescent Focus
University of MD, School of Nursing	57	MS	Psychiatric Primary Care Nurse Practitioner
University of MD, School of Nursing	42	MS	Trauma/Critical Care & Emergency Nursing: Clinical Nurse Specialist & Acute Nurse Practitioner
Coppin State University	35	Post-Cert.	Post-Master's Family Nurse Practitioner
Johns Hopkins University	5	Post-Cert.	Post-Master's Nurse Practitioner
Johns Hopkins University	63	PhD	PhD in Nursing
University of MD, School of Nursing	60-66	PhD	PhD in Nursing

Source: Catalogs of institutions of higher education.

## **2. Trends in Graduates of Maryland's Nursing Programs:**

In FY 2005, a record 2,612 nursing graduates were produced by all levels of nursing programs (certificate to doctorate) offered by Maryland higher education institutions. Maryland's higher education institutions have responded to the demand for nurses by significantly increasing the supply of nursing graduates in the past five years. **Figures 8 and 9** provide 10-year trends in "*Graduates of Maryland's Nursing Programs (FY 1996 – FY 2005)*".

### Licensed Practical Nursing (LPN) Programs:

- In FY 2005, there was a record high of 241 graduates of LPN programs. During the previous years, the number of LPN graduates fluctuated.

### Registered Nursing Programs:

- Beginning in FY 1999, the number of RN graduates declined significantly reaching a low in FY 2001. Then, in FY 2002, the trend reversed dramatically.
- From FY 2001 to FY 2005, a 46% increase in total graduates from registered nursing programs was reported. In FY 2005, 2,068 RN graduates were produced compared to 1,416 in FY 2001, representing 652 additional RN graduates.
- A 55% increase was reported in nursing graduates at the associate degree level and a 38% increase at the bachelor's degree level during the period from FY 2001 to FY 2005.

### Graduate Nursing Programs:

- In contrast to RN programs, nursing programs offered at the masters and doctorate levels produced a record number of graduates in FY 2001.
- From FY 2002 to FY 2004, there was a decline in the number of graduates of masters and doctorate level nursing programs. The downward trend was reversed in FY 2005, but did not reach the level reported in FY 2001. This is particularly significant, because graduate level nurses are candidates for nursing faculty positions. Decreased production from graduate nursing programs affect the supply of eligible nurse faculty. Insufficient nurse faculty limits the ability of Maryland higher education institutions to respond to the increasing demand for nurses in the State.

"*Graduates of Nursing Programs by Institution – FY 1996 - FY 2005*" are reported in **Appendix 1.**

Figure 8

**GRADUATES OF MARYLAND'S NURSING PROGRAMS (FY 1996 -- FY 2005)**

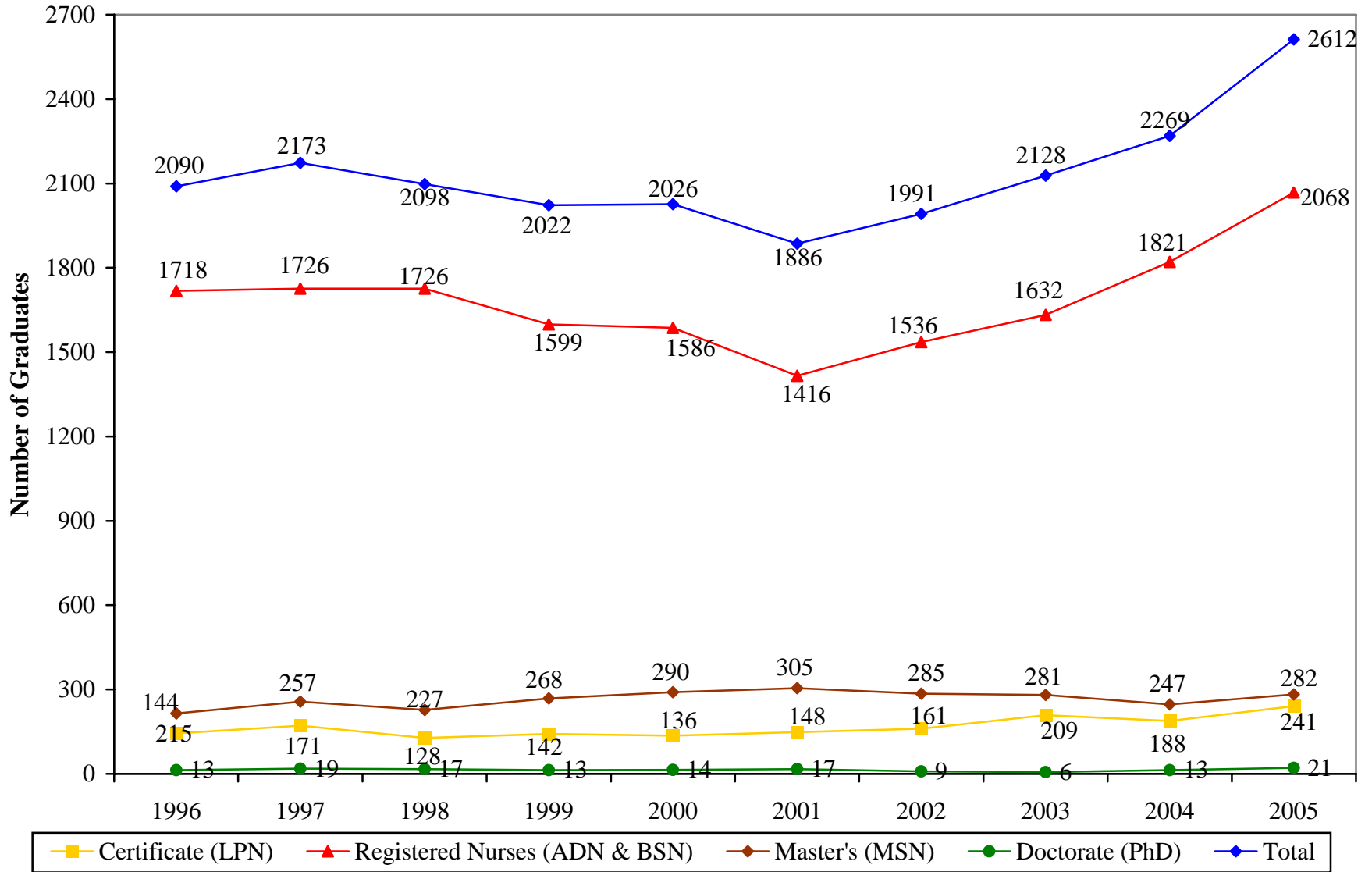
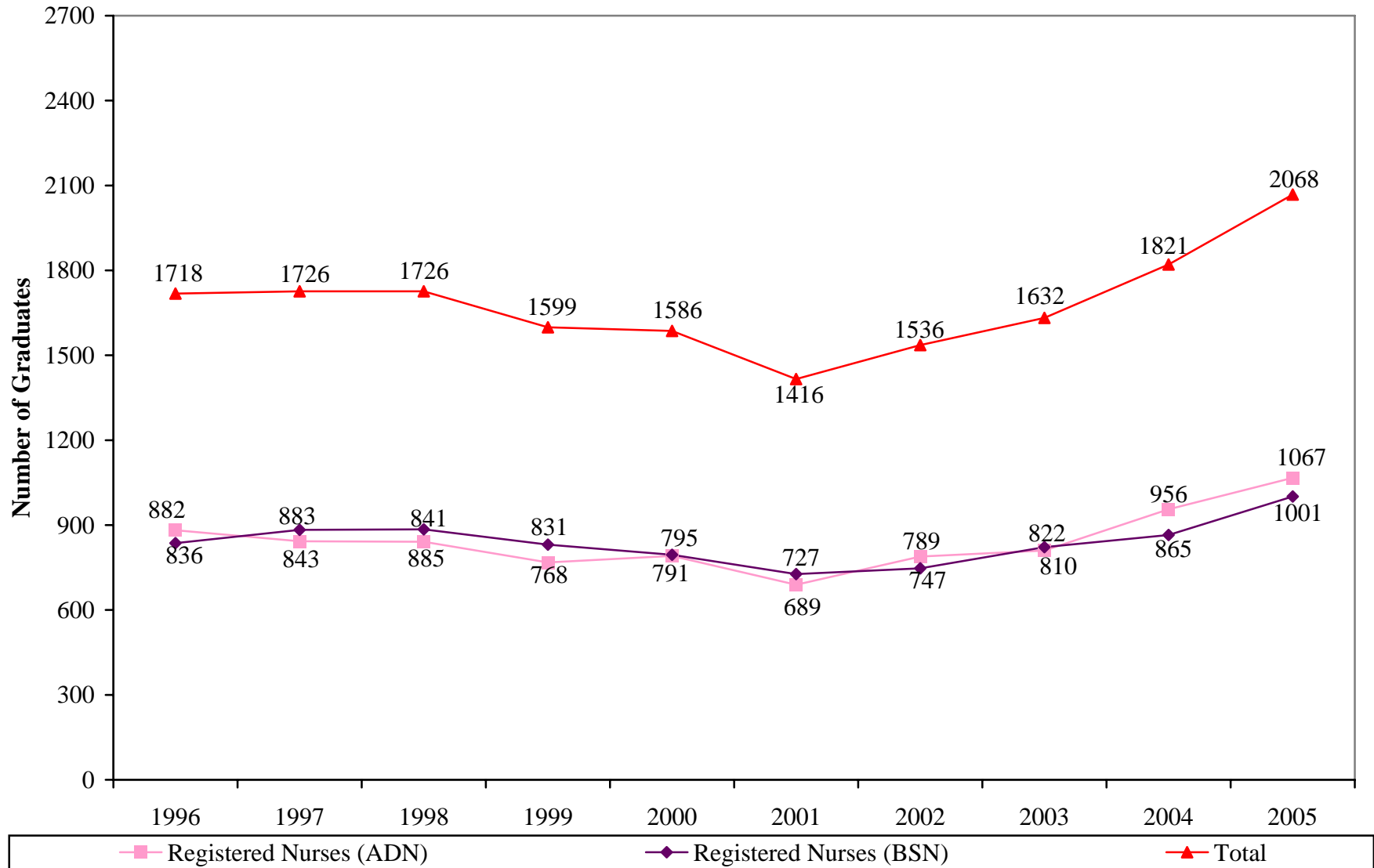


Figure 9

**GRADUATES OF MARYLAND'S REGISTERED NURSING (RN) PROGRAMS (FY 1996 -- FY 2005)**



### 3. Enrollments in Maryland’s Nursing Programs: <sup>1</sup>

Almost 5,000 students were enrolled in Maryland’s registered nursing programs in Fall 2005. RN enrollments were split nearly evenly between associate and baccalaureate programs, with 56% of the students in ADN programs and 44% in BSN or RN-BSN programs.

#### RN Enrollment – Fall 2005

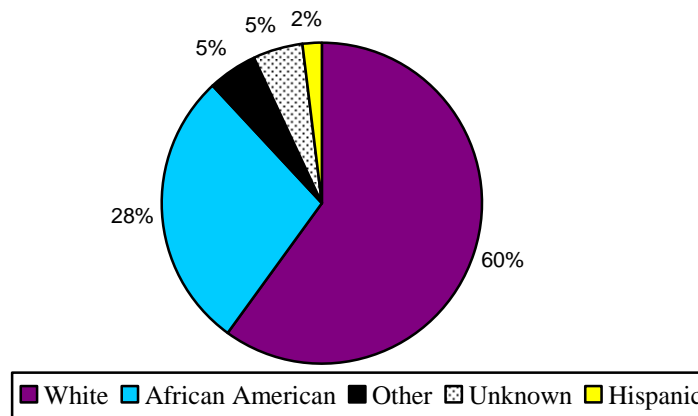
RN Programs	Enrolled as of 10/15/05
ADN	2,770
RN-BSN	205
BSN	1,942
<b>Total</b>	<b>4,917</b>

“Fall 2005 Nursing Enrollments by Institution” are provided as **Appendix 2**.

Demographics of Nursing Students: Recruiting and enrolling a diverse nursing student population is particularly desirable in order to: (1) develop the maximum pool of qualified applicants to go into nursing and (2) provide healthcare services to an increasingly racially and ethnically diverse Maryland citizenry. Provided below is the break-down by race and gender of students enrolled in registered nursing programs in Fall 2005.

Thirty-five percent (35%) of RN students enrolled in Fall 2005 were non-white, with the largest non-white representation among African-Americans (28%). Only 2% of the students were Hispanic. In Fall 2005, minorities comprised a lower percentage of RN students than minorities represent in the general student population of Maryland colleges and universities. Minorities constituted 45% of all students enrolled in Maryland higher education in Fall 2005.

ENROLLED RN STUDENTS BY RACE – FALL 2005



<sup>1</sup> All enrollment data presented in this section are based on the 2006 Annual Reports to the Maryland Board of Nursing prepared by Maryland higher education institutions with ADN, RN-BSN, and BSN nursing programs.

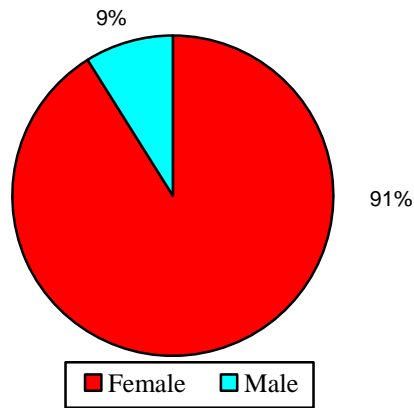
As indicated in the table below, minorities constitute 37% of enrollments in BSN programs, 35% in ADN programs and 28% in RN-BSN programs. The largest minority enrollments were at the following 6 institutions: Baltimore City Community College; Community College of Baltimore County; Montgomery College; Prince George’s Community College; Coppin State University; and University of Maryland, Baltimore.

**Total RN Students by Race – Fall 2005**

RN Programs	White		African Americans		Hispanic		Other		Unknown		Total
	Count	%	Count	%	Count	%	Count	%	Count	%	
ADN	1,599	62%	707	27%	43	2%	144	6%	93	3%	2,586
RN—BSN	436	62%	175	25%	12	2%	9	1%	74	10%	706
BSN	1,249	58%	632	29%	47	2%	135	6%	94	5%	2,157
<b>Total</b>	<b>3,284</b>	<b>60%</b>	<b>1,514</b>	<b>28%</b>	<b>102</b>	<b>2%</b>	<b>288</b>	<b>5%</b>	<b>261</b>	<b>5%</b>	<b>5,449</b>

Nursing students continue to be predominately female. Males represented 9% of nursing students enrolled in Fall 2005. Males were 11% of students enrolled in ADN programs, 4% of students in RN—BSN programs, and 7% of students in BSN programs.

**ENROLLED RN STUDENTS BY GENDER – FALL 2005**

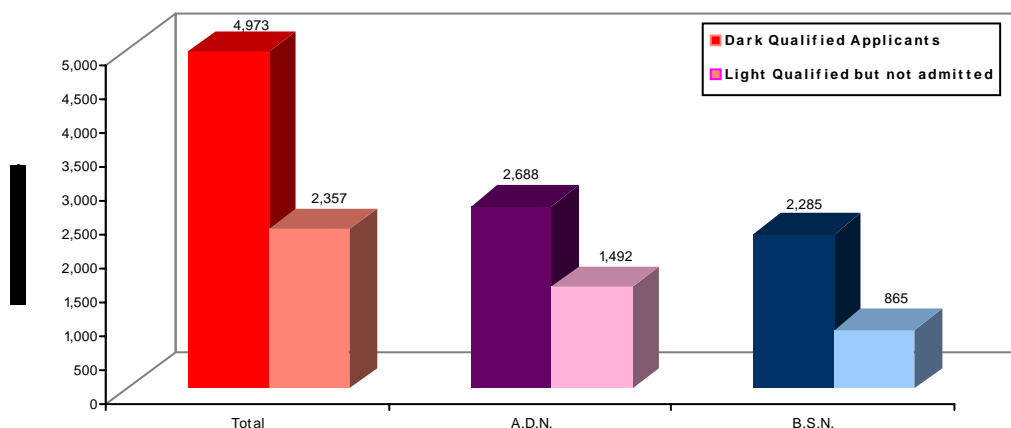


N= 5,523

Over-Subscribed RN Programs: At a time when there is a critical unmet demand for registered nurses, Maryland RN programs are admitting and enrolling less than half of the qualified applicants seeking admission. In Fall 2005, 2,357 qualified applicants were not admitted to RN programs offered at the ADN, RN-BSN, and BSN degree levels. Note, however, that to the extent that applicants applied to multiple RN programs, there is duplicate counting.

Provided below is a breakdown by degree level of qualified applicants and admitted RN students.

## RN PROGRAM CAPACITY – FALL 2005



Most higher education institutions reached their reported RN program capacity in Fall 2005. Seventy-nine percent (79%) of the RN programs met or exceeded their reported enrollment capacity in Fall 2005. This included 87% of ADN programs, 60% of RN-BSN programs, and 75% of BSN programs reported. These RN programs were unable to admit and enroll hundreds of qualified applicants who were interested in becoming registered nurses. Only two RN programs reported an unfilled capacity of more than 16 students, and these were the RN—BSN programs at Bowie State University and Coppin State University. “*Fall 2005 Program Capacity and Enrollment Statistics by Institution*” are provided as **Appendix 3**.

### RN Program Capacity and Enrollment Statistics – Fall 2005

RN Programs	Program Capacity	Admitted and Entered
ADN	1,064	1,055
RN-BSN	165	160
BSN	685	712
<b>Total</b>	<b>1,914</b>	<b>1,927</b>

#### Under-Subscribed MSN Programs:

In contrast to RN programs, program capacity has not been reached at most master’s level nursing programs. When asked in the telephone survey whether master’s nursing programs at their institutions have reached their current enrollment capacity, at least three of the six institutions said “no”. One nursing dean stated that, for the MSN program, the university “*has trouble recruiting [students] up to the maximum*”.

## C. EXPANDED CAPACITY OF MARYLAND NURSING PROGRAMS

Beginning in June 2005, the Maryland Higher Education Commission (MHEC) initiated a telephone survey of nursing deans and directors at Maryland's 24 higher education institutions with nursing programs. Topics covered in the Nursing Enrollment Capacity Survey included:

1. The current enrollment capacity of nursing programs;
2. Ways to increase nursing graduates by: (a) expanding enrollments in nursing programs, and (b) improving the graduation rates of nursing programs; and
3. Strategies to increase the supply of nursing faculty.

As a follow-up, a written survey was sent to request more specific data. For purposes of clarity, the deans and directors were asked to provide written responses to questions initially raised during the telephone survey. This provided an opportunity for them to respond based upon further reflection and research.

Maryland's nursing deans and directors were told that the Maryland Hospital Association (MHA) is projecting a significant increased demand for nurses. Additional funding will be available to expand nursing enrollment capacity. The written survey stated:

*Data obtained through this survey will assist in the design of a funding mechanism to increase the supply of qualified nurses in Maryland. Up to \$10 million will be provided by the Health Services Cost Review Commission (HSCRC) to increase the number of nursing graduates and the supply of nursing faculty necessary to train these nurses. However, any additional resources will be contingent upon providing a detailed plan that itemizes the resources required to produce a specified number of additional graduates.*

*This written survey will request that you: (1) itemize the resources necessary to increase graduation rates and/or enrollments of your nursing programs and (2) estimate the cost of these required resources.*

In the written survey, Maryland nursing deans and directors were asked to identify: (1) whether nursing enrollments could increase and, if so, by what amount; (2) the additional resources required to expand nursing programs by the numbers specified; (3) the degree of difficulty in acquiring these required additional resources; and (4) strategies to obtain the additional resources including nursing faculty. Nursing deans and directors also were requested to identify strategies to improve nursing student retention and graduation rates. The survey findings are reported below:

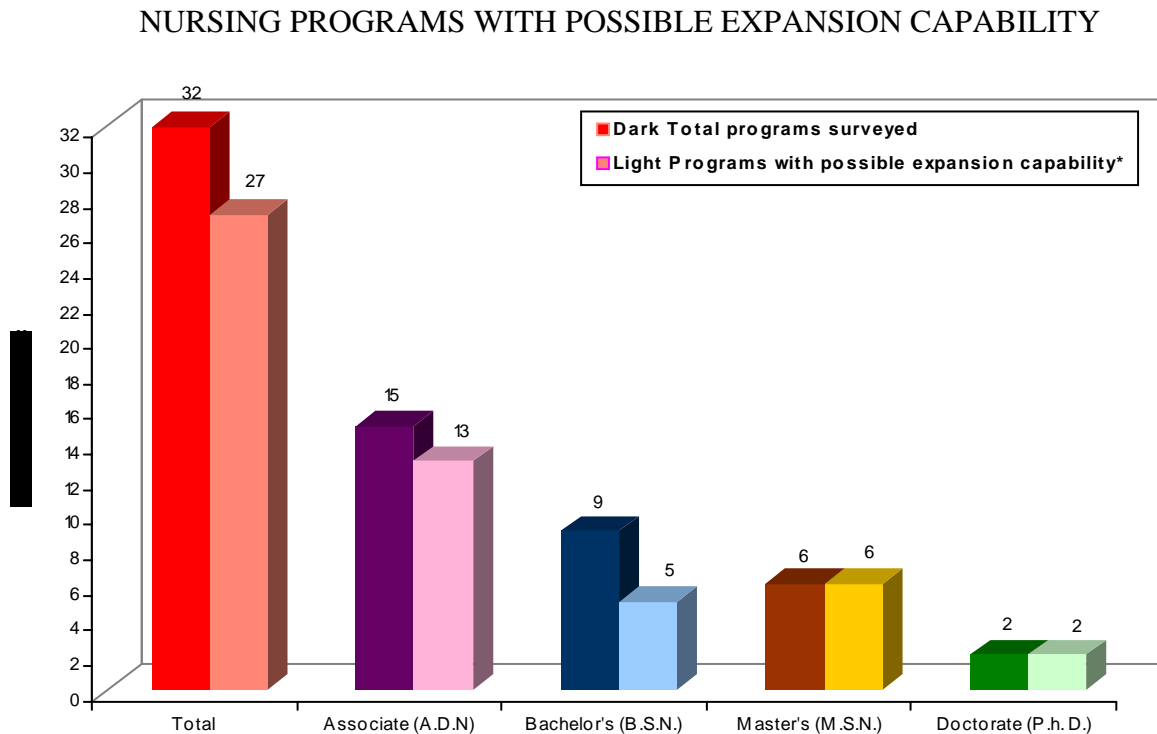
### **1. Increasing Nursing Enrollments:**

In the written survey, Maryland's 24 nursing deans and directors were asked whether enrollments in their nursing programs could be expanded. Their response was an overwhelming willingness to expand, if sufficient resources were available. Twenty-two (22) responded "yes" to the following question: "If additional resources were available, would your institution be willing and able to significantly increase enrollments in your nursing programs?" These



institutions reported that they could expand at least one of their nursing programs and sometimes all of them. The two colleges that responded “no” indicated that they recently had significantly increased enrollment and were unable to expand further any of their nursing programs.

If additional resources were available, 84% of Maryland’s 32 registered nursing programs could expand. This included 87% of the 15 RN nursing programs at the associate degree level, 55% of the 9 RN programs at the bachelor’s degree level, and 100% of the 8 graduate degree programs. Provided below is a breakdown by degree level of nursing programs that could expand, if additional resources were available.



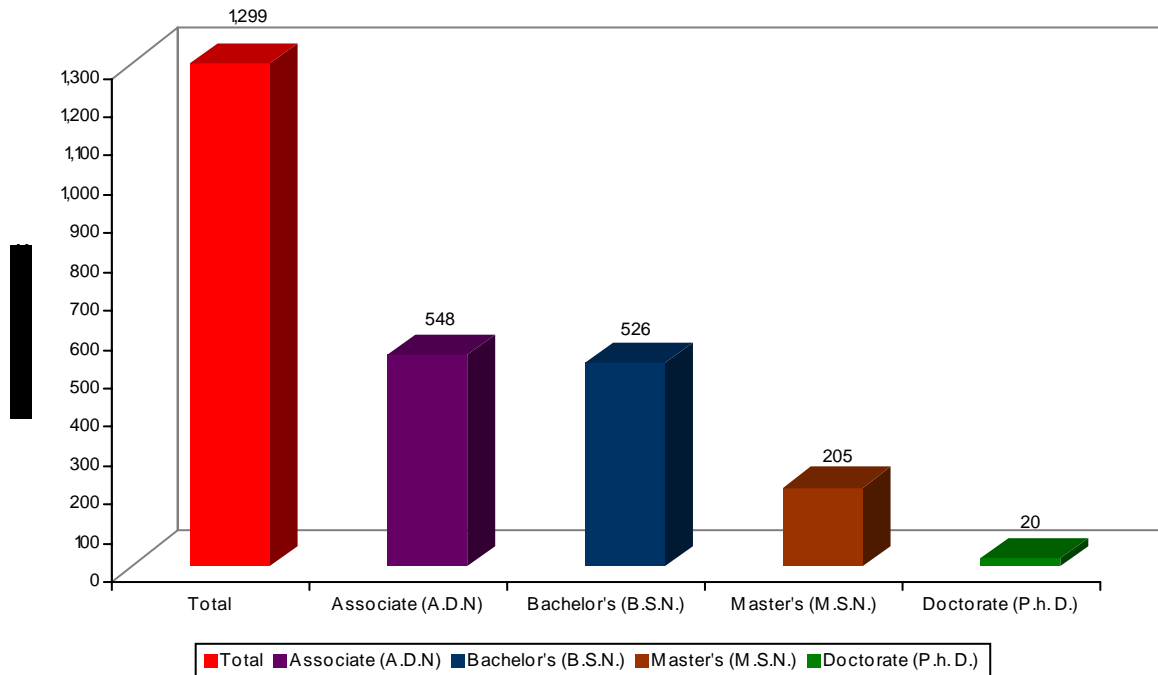
\* Responded “Yes” to the following question in a 2005 written survey: *“If additional resources were available, would your institution be willing and able to significantly increase enrollments in your nursing programs”.*

The institutions also were asked to identify *“the maximum number of additional students you could enroll and graduate from each of your programs, if additional resources were available”.* In total, Maryland’s institutions reported that they could enroll an additional 1,245 – 1,299 nursing students, if necessary resources were available. This represented more than a 25% increase in the number of nursing students admitted and enrolled in Fall 2005.

If resources were immediately available, some institutions reported that they could expand nursing enrollments as early as 2006. Most reported nursing program expansion in academic years 2006—2007 and 2007 – 2008. Approximately 10% of the additional enrollments were projected for academic year 2008 – 2009 and fall 2009. The total 1,299 additional enrollments were projected over four academic years.

Presented below is a breakdown of the projected additional enrollments by degree level:

## PROJECTED INCREASED NURSING ENROLLMENT BY DEGREE LEVEL



Note: Licensed practical nursing (LPN) programs are often part of an Associate of Nursing Degree (ADN) Program. Therefore, projected increases in LPN enrollments may be included in projected increases for ADN enrollments.

**a. Resources Required to Expand Enrollments:** In the written survey, nursing deans and directors were asked to “*Identify the additional resources necessary to increase enrollment for each program by the number specified. Assume that additional resources are contingent upon your providing a detailed plan that itemizes the resources you require to accommodate the additional enrollment you specified.*”

Significant additional resources were identified in order to enroll up to 1,299 additional students in Maryland’s undergraduate and graduate nursing programs. These included:

- Nursing Faculty
- Clinical Sites (particularly pediatric, obstetric, and psychiatric sites)
- Classroom and Lab Facilities
- Other Resources Including Funding for: (1) scholarships & stipends, (2) tutoring, mentors, testing, remediation, & support services and (3) higher education institutions.

Nurse Faculty: In total, Maryland nursing deans and directors identified a need for an additional 112 full-time and 152 part-time nurse faculty, representing more than a 25% increase in nurse faculty. Although this is a significant increase, it is consistent with the low student to instructor ratio that is the generally accepted standard for safe clinical instruction. Both the Maryland Board of Nursing (MBON) and the national accrediting commissions support low student to faculty ratios that are either 8 to 1 or 10 to 1, depending upon the type of clinical site. In addition, some clinical facilities set lower ratios.

A breakdown of the nurse faculty required to enroll the additional 1,245 – 1,299 students is identified below:

**Additional Faculty Required to Increase Nursing Enrollments by 1,245—1,299 Students  
(By Nursing Degree Level)**

Nursing Program Level	Additional Nursing Enrollment	Additional Nurse Faculty					
		Clinical		Classroom		Total	
		Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Registered Nurse (ADN & BSN)	1,030 – 1,074	55	121	41	17	96	138
Graduate Level Nurse (MSN/PhD)	215 – 225	3	6	13	8	16	14
<b>Total</b>	<b>1,245 – 1,299</b>	<b>58</b>	<b>127</b>	<b>54</b>	<b>25</b>	<b>112</b>	<b>152</b>

The greatest reported need was for additional clinical nurse faculty, particularly part-time faculty. 70% of the additional faculty was clinical faculty. Most frequently mentioned were additional clinical faculty in the following medical specialties: (1) medical/surgical, (2) pediatrics, (3) psychiatric, and (4) obstetrics.

Nursing programs are faculty intensive. Maryland deans and directors often refer to an 8:1 maximum student to clinical instructor ratio. In addition, Maryland regulations require nurse faculty hired after the effective date of the regulation to have a graduate degree in nursing.<sup>1</sup> Clinical instructors are required to have a degree in nursing at or above the baccalaureate level, a current Maryland RN license, and a minimum of two years of clinical experience as a RN. However, a nursing program may not fill more than 25% of the program’s full-time nurse faculty equivalent (FTE) positions with clinical instructors who have a baccalaureate degree.

Provided below is 2005 baseline data on nursing faculty at Maryland higher education institutions as reported in their 2006 Annual Reports to the Maryland Board of Nursing:

**Nurse Faculty Data -- 2005**

NURSE FACULTY	ADN	RN--BSN	BSN	TOTAL
# Full-time nurse faculty	174	8	254	436
# Part-time nurse faculty	286	11	242	539
<b>Total # nurse faculty</b>	<b>460</b>	<b>19</b>	<b>496</b>	<b>975</b>
Full-time FTE nurse faculty	214.1	21.3	183.2	418.5
Part-time FTE nurse faculty	111.58	5.75	45.23	162.56
<b>Total FTE nurse faculty</b>	<b>325.68</b>	<b>27.05</b>	<b>228.43</b>	<b>581.06</b>
Median Age:	49.7	54.4	50.2	50.3
Vacancies (As of 10/05):	5	0	6	11

<sup>1</sup> Until July 1, 2008, a nursing program experiencing a faculty shortage may petition the Maryland Board of Nursing for a waiver of the graduate degree in nursing.

**Other Resources:** Other additional resources are required to enroll 1,245 – 1,299 additional nursing students. Identified below are those most frequently reported in the written survey by Maryland’s deans and directors:

- Lab Equipment: Hospital beds, Sim-Man, Sim-Baby, IV arms, injection hips, mannequins including trach mannequins, computers, printers, LCD projectors.
- Lab Supplies: Medical supplies, computer software.
- Other Staff: Lab instructors and assistants, academic advisors, skills lab coordinators, administrative assistants.

**Clinical Facilities:** Approximately 500 additional clinical sites are needed to enroll over 1,000 additional students in Maryland’s registered nursing programs. Based on responses from the written survey, listed below, in rank order, are the types of clinical sites required. Note that, among the nursing deans and directors surveyed, there was quite a variance in the number of additional clinical sites needed to expand their programs.

**Types of Additional Clinical Sites Required to Expand RN Enrollments**

Type of Clinical Sites	# Sites
Out-patient Sites	105
Medical (Med.) Sites;	90
Psychiatric Sites	69
Obstetric Sites	62
Pediatric Sites	62
Surgical Sites	60
ICU/Step Down Units	46
<b>Total</b>	<b>494</b>

**b. Obstacles to Expanding Nursing Enrollments:** Nursing deans and directors were asked to identify (on a scale of 1-5) how difficult it would be to acquire the additional resources needed to increase enrollment by the numbers specified. With 5 being the most difficult and 1 the least difficult, they were to rate the level of difficulty in obtaining the following:

- Additional classroom nurse faculty;
- Additional clinical nurse faculty;
- Additional clinical sites;
- Additional classrooms and laboratories.

As described in **Figure 10** below, nursing deans and directors reported a significant degree of difficulty in obtaining all of the additional resources necessary to expand nursing enrollments. However, the greatest degree of difficulty was reported for obtaining clinical nurse faculty and clinical sites. Seventy percent (70%) of the respondents reported the highest scores of difficulty (5 and 4) for these. A slightly lower percent reported scores of 5 and 4 for classroom nurse faculty and classroom/labs, 65% and 64% respectively.

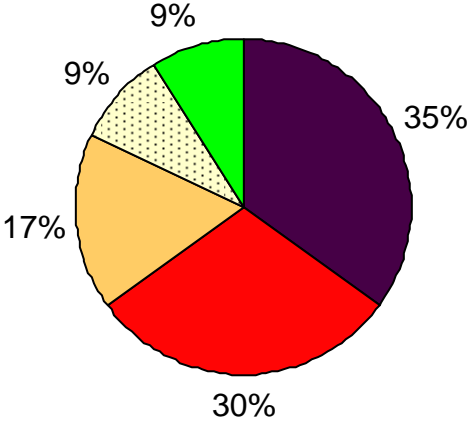
**Acquiring Additional Resources to Expand Enrollments (RN & MSN Programs)**

Level of Difficulty (Rated 1-5)	Additional Classroom Nurse Faculty		Additional Clinical Nurse Faculty		Additional Clinical Sites		Additional Classrooms/Labs	
	#	%	#	%	#	%	#	%
5 -- Most Difficult	8	35%	10	44%	10	44%	8	37%
4	7	30%	6	26%	6	26%	6	27%
3	4	17%	4	17%	5	22%	4	18%
2	2	9%	1	4%	1	4%	2	9%
1 -- Least Difficult	2	9%	2	9%	1	4%	2	9%
<b>Schools Reporting</b>	<b>23</b>	<b>100%</b>	<b>23</b>	<b>100%</b>	<b>23</b>	<b>100%</b>	<b>22</b>	<b>100%</b>

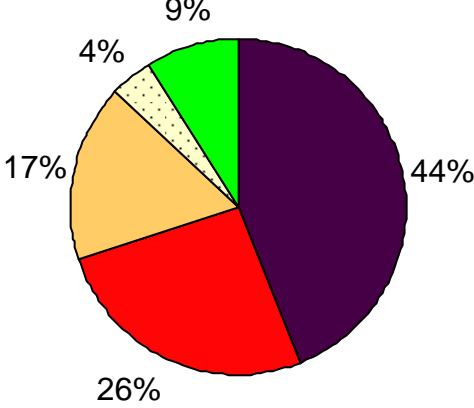
**Figure 11** compares the level of difficulty in obtaining additional: (1) classroom nurse faculty, (2) clinical nurse faculty, (3) clinical sites, and (4) classroom/labs.

**OBSTACLES TO EXPANDING NURSING ENROLLMENTS  
(RN & MSN PROGRAMS)**

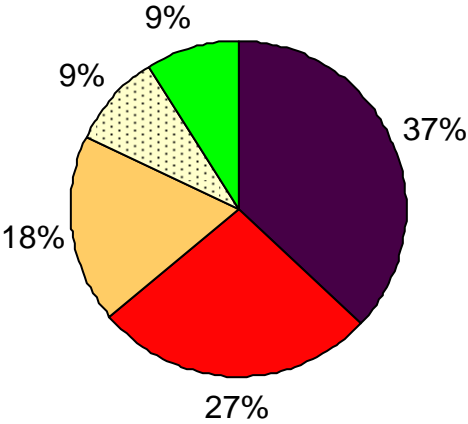
**Additional Classroom Nurse Faculty**



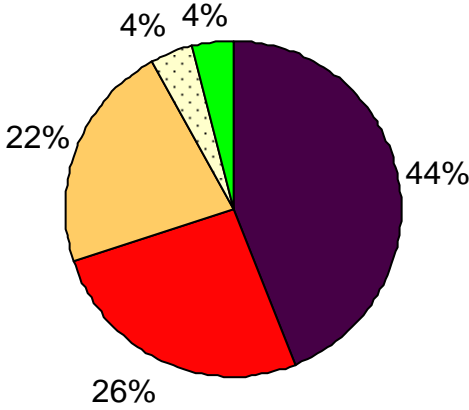
**Additional Clinical Nurse Faculty**




**Additional Classrooms/Labs**



**Additional Clinical Sites**



N= 23 respondents

	<b>5 (Most Difficult)</b>
	<b>4</b>
	<b>3</b>
	<b>2</b>
	<b>1 (Least Difficult)</b>

Acquiring Additional Resources to Expand Enrollments: Acquiring nurse faculty with the required graduate nursing degrees is a formidable challenge even at current enrollment levels. Frequently, nursing program expansion is limited by the shortage of qualified nurse faculty, particularly clinical faculty in specialties such as pediatrics, obstetrics, psychiatric, and medical/surgical. Nursing deans and directors report that there are insufficient nurses with at least a MSN degree to qualify as nurse faculty. Those with these credentials are difficult to attract and retain as nurse faculty, in large part, because of non-competitive salaries and benefits for nurse faculty. According to the nursing deans and directors, nurses frequently take substantial salary cuts when they become nurse faculty. The current nurse faculty shortage will be exacerbated by upcoming retirements among an aging nurse faculty population. According to the nursing deans and directors, these retirements will create a nursing faculty crisis. As described in the next section, nursing deans and directors are developing and implementing creative strategies to recruit and retain nurse faculty including “growing your own” faculty. However, a fundamental unresolved issue is the lack of competitive compensation for nurse faculty.

Securing additional clinical sites is a challenge, particularly clinical sites in the following medical specialties: pediatrics, obstetrics, psychiatric, and medical/surgical. For ADN programs, the greatest difficulty was reported in obtaining additional clinical sites and clinical faculty. 77% of the respondents reported the highest scores of difficulty (5 or 4) for these. Maximum utilization of clinical sites is essential, particularly in regions of the State in which multiple nursing programs are utilizing a limited number of sites. Coordinating and/or centralizing the scheduling of clinical sites is just one of the strategies identified by nursing deans and directors to maximize the utilization and efficiency of clinical sites. Another strategy for increasing the availability of clinical sites is more extensive use of long-term care facilities for clinical sites.

Available classroom and lab space represents the biggest challenge for some nursing programs. To expand Bachelor’s of Science in Nursing (BSN) programs, the greatest difficulty was reported in obtaining additional classroom/lab facilities. Eighty percent (80%) of the respondents reported the highest scores of difficulty (5 or 4) for these. Insufficient additional space is available to expand several BSN programs. One university stated that it needs to renovate its current labs. Another stated that its building is “maxed out”, and the university needs to expand its classrooms and add a 1-2 story addition to its existing facility. For ADN programs, substantially less difficulty was reported in acquiring the necessary classroom/labs. This may reflect the fact that several community colleges recently acquired new health science and nursing facilities including: Wor-Wic Community College, Montgomery College, and Carroll Community College.

An over-arching obstacle to expanding the enrollment capacity of nursing programs is the high cost of delivering nursing programs. In the survey, most nursing deans and directors reported that their nursing programs do not break even financially because of: (1) the high cost of classroom and lab facilities, and (2) low student to instructor ratios. This is a significant impediment to the expansion of Maryland’s nursing program. At some research universities, outside research grants subsidize the cost of their undergraduate nursing programs.

**c. Effective Strategies to Obtain Resources Necessary to Increase Enrollments:**

Nurse Faculty: In the telephone survey, the nursing deans and directors were asked to identify “strategies that could be implemented to assist in recruiting and retaining nursing faculty needed to enroll the additional students previously specified.” In the follow-up written survey, the deans and directors were asked “On a scale of 1-5, rate the potential of the following statewide strategies to increase the supply of nursing faculty with MSN degrees. (Listed below are strategies reported by the institutions.)”

The responses are identified below. They are grouped in rank order by the type of strategy including: (1) faculty compensation, (2) scholarships and other financial incentives, (3) increased access to nurse educator programs, and (4) increased efforts to recruit nurse faculty.

<b>Strategies to Increase Nursing Faculty</b> (Rating from 1-5 with 5 = greatest potential)	<b>Total Rating</b>
<b>1. <u>Faculty Compensation:</u></b>	
Increase nursing faculty salaries – for all nursing faculty.	<b>104</b>
Provide salary stipends to retain current expert faculty and to recruit new faculty.	<b>102</b>
<b>2. <u>Scholarships and Other Financial Assistance:</u></b>	
Establish scholarships to nurses who seek advanced degrees in order to become full-time faculty members in Maryland nursing programs.	<b>99</b>
“Grow Your Own Faculty” – Provide scholarships, stipends, and release time for part-time nursing faculty to obtain a master’s or doctorate degree in nursing.	<b>95</b>
Provide scholarships and stipends to full-time nursing students in exchange for a commitment to teach in a Maryland nursing program.	<b>91</b>
<b>3. <u>Increased Access to Nurse Educator Programs:</u></b>	
Develop graduate level nursing educator courses and programs.	<b>81</b>
Create 1-year MSN programs designed to prepare nursing faculty.	<b>69</b>
Increase access -- Offer MSN programs at regional higher education centers.	<b>68</b>
Create ADN to MSN programs.	<b>65</b>
Increase access -- Offer MSN programs at hospital locations.	<b>63</b>
On-line MSN programs.	<b>5</b>
Maximum Score = 115	



<b>4. <u>Increased Recruitment Efforts for Nurse Faculty:</u></b>	<b>Total Rating</b>
Grant waivers that allow students pursuing a MSN degree to teach nursing programs and exempt them from the 25% quota of nursing faculty with BSN degrees.	<b>88</b>
Develop a pool of applicants for faculty positions by: (1) holding sessions for hospital employees to promote the benefits of working as faculty, and (2) having hospitals provide release time to employees to allow them to shadow nursing faculty.	<b>69</b>
Promote the advantages of a career in nursing education and more effectively advertise available nursing faculty positions by: (1) using the Internet and (2) promoting nursing faculty careers to licensed nurses and BSN and MSN students.	<b>68</b>
Develop joint appointments with hospitals and other healthcare providers	<b>64</b>
Hire retired nursing faculty.	<b>51</b>
Maximum Score = 115	

Clinical Sites: In the Nursing Enrollment Capacity Surveys, the nursing deans and directors reported strategies that could be implemented to develop the clinical sites needed to enroll the additional students previously specified. These include the following:

- Schedule clinical sites on off-days – weekends and evenings
- Hire clinical site coordinators to schedule sites.
- Have a centralized calendar for clinical sites to maximize the utilization and efficiency of sites.
- Explore alternatives to requiring training at in-patient sites, particularly for pediatrics, obstetrics, and psychiatric.

Classroom and Lab Facilities: The nursing deans and directors also reported strategies that could be implemented to obtain the classroom and lab facilities needed to enroll the additional students previously specified. These included the following:

- Schedule training for off-days – weekends and evenings.
- Utilize the facilities of hospitals and other healthcare providers.
- Offer on-line training.

## **2. Increasing Student Retention and Graduation:**

Another strategy for increasing the number of nursing graduates in Maryland is to increase nursing student retention and graduation rates. As indicated in **Figure 12**, an 80% graduation rate was reported by a majority of the 24 registered nursing programs offered at the ADN and

BSN degree levels. While the statewide average graduation rates are quite high for registered nursing programs, there are several institutions with programs well below these averages. If graduation rates were improved throughout the State, the supply of registered nurses available to work in Maryland could increase up to 20%. Over 400 additional nurses would graduate, if all the nursing programs achieved at least an 80% graduation rate.

Figure 12

**Graduation Data – 2005<sup>1</sup>**

<b>1. <u>ADN Programs</u></b>	<b><u>Graduates</u></b>	<b><u>Graduation Rates</u></b>
Carroll Community College	19	100%
Montgomery College	91	99%
Prince George's Community College	85	98%
Hagerstown Community College	55	96%
Cecil Community College	45	93%
Harford Community College	79	89%
Chesapeake College	36	77%
Wor-Wic Community College	49	77%
Anne Arundel Community College	94	72%
Allegany College of Maryland	87	70%
College of Southern Maryland	72	67%
Community College of Baltimore County	196	58%
Howard Community College	76	44%
Baltimore City Community College	39	Not Reported
Frederick Community College		Not Reported
<b>Subtotal</b>	<b>1,023</b>	<b>80%</b>
<b>2. <u>RN to BSN Programs</u></b>		
Villa Julie College	25	95%
University of Maryland, Baltimore	68	93%
Bowie State University	18	85%
Coppin State University	6	83%
College of Notre Dame of Maryland	18	Not Reported
<b>Subtotal</b>	<b>135</b>	<b>89%</b>
<b>3. <u>BSN Programs</u></b>		
Johns Hopkins University	232	100%
Columbia Union College	34	97%
Salisbury University	80	94%
University of Maryland, Baltimore	322	92%
Towson University	91	84%
Bowie State University	27	45%
Villa Julie College	69	20%
Coppin State University	39	Not Reported
<b>Subtotal</b>	<b>894</b>	<b>76%</b>

<sup>1</sup> All graduation data presented in this section are based on the 2006 Annual Reports to the Maryland Board of Nursing prepared by the Maryland higher education institutions with ADN, RN-BSN and BSN nursing programs. Graduation rates were reported in response to the following question: "What is the percentage of 2004 – 2005 graduates who completed the program within two years after admission to the first nursing clinical course?"

In the telephone survey, Maryland nursing deans and directors were asked to list “*the major factors that contribute to student attrition*”. Provided below are their responses.

Causes of Attrition	ADN		BSN	
	#	%	#	%
Academic preparedness & program intensity	11	73%	5	56%
Financial need & student need to work	9	60%	2	22%
Family & personal issues	5	33%	2	22%
Language & other foreign student issues	5	33%	0	
Total	15	100%	9	100%

“*Academic preparedness and program intensity*” was most frequently identified as a major cause of attrition. This was reported by 73% of the deans/directors of ADN programs and 56% of the deans/directors of BSN programs. “*Financial need & student need to work*” was the second most frequently identified cause of student attrition. However, a substantially higher percentage of deans/directors of ADN programs (60%) identified this as a major factor compared to 22% of the deans/directors of BSN programs.

In the telephone survey, the deans/directors also were requested to identify “*additional strategies that could be implemented to increase the graduation rate of each of your programs*”. Their responses were compiled into a list of strategies to improve retention and graduation that was used in the follow-up written survey.

On the written Nursing Enrollment Capacity Survey, the 24 nursing deans and directors were asked the following: “*Identify with a check (✓) any additional strategies that could be implemented by your institution to increase the graduation rates of your nursing programs. (For your convenience, a list of strategies identified by the nursing deans and directors during the telephone survey is provided below.)*”

Provided below are the written responses of the 24 nursing deans/directors surveyed. Strategies are grouped by the cause of attrition being addressed. Within each grouping, the strategies are listed according to the number of times each strategy was selected by the nursing deans and directors.

Strategies to Improve Retention and Graduation	# Responses
<b>1. <u>Academic preparedness &amp; program intensity:</u></b>	
Additional tutoring	<b>19</b>
Mentors – especially clinical mentors	<b>14</b>
On-line testing and remediation	<b>14</b>
Pre-admission course with advising	<b>8</b>
Pre-admission testing	<b>8</b>
Redesign of curriculum	<b>7</b>
Free “Transition Course” or Application Course”	<b>6</b>

Mentors/education settings for individual "teaching practicums"	1
Counseling services	1
Faculty release time to develop clinical simulations	1
<b>2. <u>Financial need &amp; student need to work:</u></b>	
Additional scholarship and tuition support	20
Living expenses for students	15
Student health insurance	8
<b>3. <u>Language &amp; other foreign student issues:</u></b>	
Consultant to identify strategies for working with diverse students	9
English for Speakers of Other Language (ESOL) training	7
<b>* Maximum Possible Responses = 24</b>	

### **3. Utilization of Survey Findings:**

Data obtained through the Nursing Enrollment Capacity Surveys assisted in the design of the Nurse Support Program II (NSP II), a significant new funding mechanism to increase the supply of qualified nurses in Maryland and the nurse faculty necessary to train these nurses. As described in the next section, the Health Services Cost Review Commission (HSCRC) created NSP II in 2006 and dedicated approximately \$8.8 million each year for ten years to address Maryland's shortage of nurses and nurse faculty. Information from the survey guided the establishment of Competitive Institutional Grants and Statewide Initiatives funded through NSP II. Many of the resources and strategies identified in the surveys by Maryland's nursing deans and directors are eligible for funding through NSP II. These include: (1) the additional resources necessary to expand Maryland's nursing program enrollments, and (2) effective strategies to increase nurse faculty as well as improve student retention and graduation.

## **II. AVAILABILITY OF FINANCIAL AID AND OTHER INCENTIVES THAT ENCOURAGE INDIVIDUALS TO PURSUE NURSING EDUCATION PROGRAMS**

The State of Maryland offers many incentives to encourage individuals to pursue nursing education. Some have been in existence for many years, while others have emerged over the last two years to address the increasing demand for nurses as evidenced in Section II of this report. These incentives may provide financial assistance to nursing students or funding directly to nursing programs to improve nursing retention, purchase equipment for labs, or provide other program enhancements.

Funding for these initiatives comes from a variety of sources including: State General Funds, federal grant funds, State special funds, and private funds. Descriptions of the financial incentives are presented in detail below. In each instance, the funding source is identified. In addition, **Figure 13** on the next page reports expenditures from FY 2002 to FY 2004 for State and federal financial assistance available to those training to become nurses or nurse faculty.

### **A. NURSING SCHOLARSHIP AND LOAN PROGRAMS**

The Maryland Higher Education Commission's Office of Student Financial Assistance is currently responsible for the administration of 28 State financial assistance programs. These programs are designed to improve access to higher education for needy students; encourage students to major in areas of great economic need to the State, such as teaching and nursing; and encourage Maryland's brightest students to attend college in the State. The programs focusing on areas of economic need are classified as Career and Occupational Programs. Fourteen programs fall into this category, two of which address the need for nurses and nurse faculty. These two programs are: (1) the State Nursing Scholarship and Living Expenses Grant, and (2) the Janet L. Hoffman Loan Assistance Repayment Program. These two programs have been in existence for many years; however, changes have been made to these programs over the last two years to better address the nursing shortage in Maryland.

MHEC is in the process of refining its Career and Occupational programs through the development of the Workforce Shortage Student Assistance Grant Program. This new program will encompass 7 existing career and occupational programs, including the State Nursing Scholarship and Living Expenses Grant, and offer greater flexibility to address workforce shortages in the State. These programs, their recent changes, and implementation plans are discussed in detail below.

#### **1. State Nursing Scholarship and Living Expenses Grant (State Funds):**

The Nursing Scholarship and Living Expenses Grant was implemented in 1991 to provide State aid to students pursuing a career in nursing. From FY 2002 to FY 2006, funding for the Nursing Scholarship has increased by 34%, from \$1.3 million to \$1.7, and the number of recipients has increased by 35%, from 480 to 650. This trend is expected to continue since funding for the program increased to \$2.1 million in FY 2007.

**Nursing Scholarships and Loans**

Scholarship Program	Expenditures	FY 2002 Recipients	Avg. Award	Expenditures	FY 2003 Recipients	Avg. Award	Expenditures	FY 2004 Recipients	Avg. Award
Janet L. Hoffman Loan Assistance Repayment – State Nurses	103,961	51	2,038	84,679	45	1,881	27,713	15	1848
Nurse Faculty	103,961	51	2,038	84,679	45	1,881	27,713	15	1848
State Nursing Scholarship – State	1,264,592	480	2,635	1,073,106	402	2,669	1,066,371	400	2666
Teach for the Health Of It –Federal									
<b>TOTAL</b>	<b>1,368,553</b>	<b>531</b>	<b>2,577</b>	<b>1,157,785</b>	<b>447</b>	<b>2,590</b>	<b>1,094,084</b>	<b>415</b>	<b>\$ 2,636</b>

Scholarship Program	Expenditures	FY 2005 Actual Recipients	Avg. Award	Expenditures	FY 2006 Estimate Recipients	Avg. Award	% Change FY 02 to FY 07	
							Expenditures	Recipients
Janet L. Hoffman Loan Assistance Repayment – State Nurses	119,737	74	1,618	365,466	203	1,800	252%	298%
Nurse Faculty	112,005	69	1,768	339,925	193	1,761	227%	278%
State Nursing Scholarship – State	7,732	5	1,546	25,541	10	2,554		
Teach for the Health Of It – Federal	1,702,411	714	2,384	1,700,416	650	2,616	34%	35%
<b>TOTAL</b>	<b>206,854</b>	<b>108</b>	<b>1,915</b>	<b>437,736</b>	<b>91</b>	<b>4,810</b>		
	<b>2,029,002</b>	<b>896</b>	<b>2,265</b>	<b>2,503,618</b>	<b>944</b>	<b>2,652</b>	<b>83%</b>	<b>78%</b>

Awards are provided for tuition and mandatory fees up to \$3,000 annually, and recipients are required to serve in a nursing shortage area in Maryland one year for each year a grant is received. A living expenses grant of up to \$3,000 annually is available based on need. Nursing students enrolled in a program that includes mandatory summer academic sessions may be awarded the amount of tuition and fees not to exceed \$4,500 per calendar year.

Recent legislative and guideline changes were made to this program to enable a recipient to fulfill his/her service obligation on a part-time basis and as a nurse faculty member. In addition, guideline changes were made that established a process by which an applicant may receive an award to attend an out-of-state institution if the applicant was accepted and deferred at an eligible Maryland institution due to lack of capacity. Data is not yet available to determine the impact of the modification of the service obligation; however, this will be tracked on a yearly basis. Program funding has not been at a level to award students attending out-of-state institutions.

To determine the effectiveness of the State Nursing Scholarship Program, a study, which surveyed program recipients, was performed in 2004. It was found that the program is very effective in retaining nurses. Over 95% of the recipients surveyed who are currently performing their service or have completed their service obligation responded that they plan to continue working as a nurse after their service obligation was completed.

## **2. Workforce Shortage Student Assistance Grant Program (State Funds):**

Maryland is one of a very few states implementing a new initiative that directly targets State financial assistance for postsecondary education to address its critical workforce occupations. This new initiative will significantly impact the State's ability to attract individuals into critical workforce occupations across the State, such as nursing.

Legislation was enacted during the 2006 General Assembly session, Higher Education – Workforce Shortage Student Assistance Grants (Chapter 367, Acts of 2006), giving the Maryland Higher Education Commission (MHEC) the authority to consolidate seven existing workforce related State financial assistance programs into a new Workforce Shortage Student Assistance Grants Program. The State Nursing Scholarship and Living Expenses Grant will be consolidated into this program. In addition, MHEC is authorized to develop a process to identify critical workforce occupations to be included in the consolidated program. An Advisory Council will be appointed to identify workforce shortage fields in the State and recommend to MHEC priority fields to be included in the grant program.

In FY 2008, the program will be implemented using the eligible programs and occupational areas of the existing State workforce scholarship programs. Beginning in FY 2009, the program will include occupations identified by the Advisory Council to be critical workforce shortage occupations. It is envisioned that this program will be expanded over the next few years to better meet the State's workforce needs. This program offers flexibility to increase award amounts to provide a greater incentive for students to go into certain occupations, such as nursing, and with the establishment of service obligations to better target students to specific occupational areas.

The anticipated program budget for FY 2008, determined by adding the budgets for each existing workforce related State financial assistance program, is approximately \$4 million.

Approximately 1,553 students could receive an award at this funding level for an average award of approximately \$2,200.

### **3. Janet L. Hoffman Loan Assistance Repayment Program (Special Funds):**

The Janet L. Hoffman Loan Assistance Repayment Program (LARP) was implemented in 1988 to provide assistance to individuals working in specified fields to assist in the repayment of educational loan debt. Funding for this program comes from the fees collected by the Maryland Board of Physicians. In past years, the LARP General program provided up to \$7,500 annually for nurses, lawyers, physical and occupational therapists, social workers, speech pathologists, and teachers in Title I Schools or those designated for improvement who work for Maryland State, local government, or nonprofit agencies.

To address the nurse faculty shortage, guideline changes were made in FY 2005 to expand program eligibility requirements to include individuals working as nurse faculty members. In FY 2007, assistance will be provided to the same occupational groups; however, the awarding structure has been changed to provide three-year awards based on overall reported educational loan debt. Recipients will continue to receive a set award amount in each of the three years as long as the individual continues to meet eligibility requirements. In effect these changes will increase award amounts offered and keep nurses and nurse faculty employed for three years, hopefully having the same impact on retention as found in the study of the nursing scholarship program.

Additional funds to award nurses and nurse faculty were provided for LARP in FY 2005 and FY 2006. The number of awards increased in FY 2005, but the real impact occurred in FY 2006 with 193 nurses and 10 nurse faculty receiving awards totaling \$365,466. It is anticipated that this number of awards will be maintained with the changes being implemented in FY 2007.

### **4. Teach for the Health of It (Federal Funds):**

The Governor's Workforce Investment Board (GWIB) received a \$1.5 million federal grant to implement Teach for the Health of It, an innovative program designed to fund training for future nurse faculty and incumbent healthcare workers. Approximately \$1 million is earmarked for scholarships to train nurse faculty needed to expand Maryland's nursing programs. The remaining balance is for incumbent worker training to upgrade the skills of currently employed healthcare workers. The grant was awarded for a 2-year period. However, the State requested and received a 1-year extension that allows funding to continue through FY 2007.

Under Teach for the Health of It, hospitals and other healthcare providers are to work collaboratively with Maryland's nursing programs to provide the nurse faculty necessary to expand the capacity of Maryland's nursing programs. As described below, the program has three components: (1) nursing faculty component, (2) succession planning component, and (3) incumbent worker component.



- Nursing Faculty Component: Under the Teach for the Health of It Program, hospitals and other healthcare providers are asked to release their employed nurses and allow them to teach in Maryland's nursing programs. While serving as nurse faculty, these nurses are to remain on the payroll of the healthcare providers and collect their same wages and benefits. In turn, the higher education institutions utilizing these nurse faculty are to reimburse the healthcare providers what they would normally pay these nurse faculty. In addition, the federal grant provides individual scholarships of up to \$10,000 each to nurses who require a Master's of Science in Nursing (MSN) or other credential before becoming nurse faculty.
- Succession Planning Component: Additional scholarships of up to \$10,000 each are provided to incumbent healthcare workers seeking to become registered nurses (RN) and replace those who left to become nurse faculty. Scholarships are awarded to those attending RN programs.
- Incumbent Worker Training Component: Maryland healthcare employers who participate and release nurses to become nurse faculty are eligible for funding for incumbent worker training. Approximately \$500,000 is allocated to provide training to upgrade the skills of existing healthcare workers. This portion of the program is for healthcare workers other than nurses. Employers are required to provide matching funds for this training.

The Maryland Higher Education Commission's Office of Student Financial Aid (OSFA) is administering the scholarships provided through the nurse faculty and succession planning components of the program. Approximately, \$1 million has been awarded to 220 nursing students. These funds are being awarded to students over a multi-year time frame as indicated by the FY 2005 and FY 2006 data reported in **Figure 13**. This includes 60 master's level students who have a goal of becoming nurse faculty. Many of the nurse faculty students will be receiving scholarship funding through the spring 2007 semester.

##### **5. Sallie Mae's Care for Maryland Program (Federal Loan Reduction):**

Another initiative implemented in Maryland last year in partnership with Sallie Mae is Care for Maryland. This initiative is provided by Sallie Mae, the nation's leading provider of student loans. The Maryland Higher Education Commission partnered with SLM for a new program designed to attract and retain teachers and nurses in Maryland. SLM's Care for Maryland<sup>SM</sup> loan assistance program will offer aspiring Maryland nurses up to 10 percent of their loans back after starting their careers in the State. The student loans are low-cost Stafford loans backed by the federal government.

Through this partnership with the State, nursing students at any Maryland college or university who commit to work as nurses in the State are eligible for the program. Students who participate in this new loan program will be eligible to receive up to 10 percent of the total amount of their student loans back (based on the original principal amount of their loans) after making 36 months of regular on-time payments and teaching or nursing in Maryland for three years. The program began in January 2006. Data is not yet available on the number of students benefiting from this program.

## **B. HEALTH PERSONNEL SHORTAGE INCENTIVE GRANT PROGRAM (HPSIG) (SPECIAL FUNDS):**

The Health Personnel Shortage Incentive Grant (HPSIG) Program, created by legislation (Code of Maryland, Education Article, §18-803), is designed to increase the number of graduates eligible for licensure, certification, or registration in designated health shortage occupations by expanding or enhancing the programs producing those graduates. Funding for the HPSIG Program comes from the fees collected by the Maryland Board of Physicians. Fourteen percent (14%) of the fees collected by the Board is distributed to the Maryland Higher Education Commission to be divided equally between the HPSIG Program and the Janet L. Hoffman Loan Assistance Repayment Program. From the HPSIG portion of the funds, grants are made to institutions offering educational programs leading to licensure, certification, or registration in health occupations that have a statewide labor shortage.

The Department of Health and Mental Hygiene annually provides a list of health occupation shortage fields to the Commission, which in turn determines which academic programs are eligible to apply for funds. The following are the eligible shortage fields for FY 2007:

- Dentist
- Dental Assistant
- Dental Hygienist
- Diagnostic Medical Sonographer
- Emergency Medical Technician
- **Licensed Practical Nurse**
- Medical Assistant
- Medical Lab Technician
- Medical Records Technician
- Medical Transcriptionist
- Mental Health Counselor
- **Nursing Faculty**
- **Nurse Practitioner**
- Paramedic
- Pharmacist
- Pharmacy Technician
- Physical Therapist
- Physical Therapy Assistant
- Physician
- Physician Assistant
- Radiographer
- Radiologic Technologist
- **Registered Nurse**
- Respiratory Therapist
- Respiratory Technician
- Speech Language Pathologist
- Surgeon

Institutions receiving funds from the HPSIG Program submit annual reports describing how funds were spent and how such expenditures serve to expand or enhance health shortage programs. Reports for FY 2005 indicate the following types of expenditures using HPSIG funds:

- part-time faculty to add another course section or to provide more attention per student;
- equipment for clinical simulation labs;
- reference materials for program libraries;
- subscriptions for professional journals;
- review materials and anatomical models, charts etc.;
- tutoring to help with retention;
- printing recruitment brochures and paying for other recruiting activities; and
- certification examination review materials or review course instructors.

For each student in excess of a base number who graduates from an academic program in a designated health shortage occupation field, institutions are awarded up to \$1,500 to enhance or expand approved educational programs leading to licensure or certification in health occupations in short supply. If sufficient funds are not available in any fiscal year to fully fund all awards, the grant allocation is prorated.

**HPSIG Awards FY 2002 – FY 2006**

<b>Fiscal Year</b>	<b>Appropriation</b>	<b>Prorated Award Per Graduate</b>	<b>% of Full Funding *</b>	<b># Graduates above Base Year #</b>
FY 2006	\$391,836	\$186.95	12.5	2,096
FY 2005	\$407,804	\$278.75	18.6	1,469
FY 2004	\$406,872	\$419.46	28.0	970
FY 2003	\$560,849	\$773.58	51.2	725
FY 2002	\$338,747	\$630.80	45.4	537
* Full funding would be \$1500 per graduate.				

In addition to overall increases in the number of graduates, there are other factors that have caused a significant decrease in the HPSIG grant amounts awarded to institutions. In FY 2002, there was a change in statute that changed the methodology used to determine the base number, which has caused the number of eligible graduates to increase. The change allows schools to use the number of graduates in any year beginning with academic year 1990-1991 as the base number instead of setting the number of graduates in academic year 1990-1991 or the program’s first year as the base year for all programs.

Also, the shortage list has changed over the past five years. While four shortage areas (occupational therapist, occupational therapy assistant, pharmacy assistant, and surgical technologist) have been deleted, many shortage fields have been added, some that incorporate many different types of academic programs. The additions are diagnostic medical sonographer, licensed vocational nurse, medical assistant, medical transcriptionist, mental health counselor, nurse faculty, physician, respiratory technician, speech language pathologist, and surgeon. For instance, the designation mental health counselor is very general and has the potential to increase the eligible number of graduates dramatically because included in this are areas such as family life educators, substance abuse counselors, psychologists, as well as psychiatrists. Surgeon includes plastic surgeon as well as all other types of surgeons.

For FY 2006, the new additions to the list added 207 eligible graduates causing a further erosion of the award amount per graduate. One of those, medical assistant, accounted for 104 of the additional eligible graduates. Another factor that has contributed to the decrease in the award amount is that the amount of funds available for the program fluctuates from year to year, in some instances in excess of \$200,000, because the funding for the program is from the fees collected by the Maryland Board of Physicians.

**Figure 14** provides a *Summary of FY 2006 HPSIG grants*.

Figure 14

**Summary of FY 2006 HPSIG Awards**

<b>Health Personnel Shortage Incentive Grant Program Academic Year 2004-2005 Graduates</b>			
<b>Institution</b>	<b># Programs Producing Eligible Graduates</b>	<b>Eligible Graduates</b>	<b>Funding</b>
Allegany College of Maryland	10	162	\$30,285.08
Americare School of Allied Health	1	11	\$2,056.39
Anne Arundel Community College	8	71	\$13,273.09
Baltimore City Community College	6	59	\$11,029.75
Carroll Community College	2	30	\$5,608.35
Cecil Community College	2	28	\$5,234.46
Chesapeake College	3	26	\$4,860.57
College of Southern Maryland	2	30	\$5,608.35
Columbia Union College	2	20	\$3,738.90
Community College of Baltimore County	6	129	\$24,115.90
Frederick Community College	4	40	\$7,477.80
Hagerstown Business College	1	20	\$3,738.90
Hagerstown Community College	3	48	\$8,973.36
Harford Community College	3	35	\$6,543.07
Holy Cross Hospital School of Radiological Technology	1	4	\$747.78
Howard Community College	3	43	\$8,038.63
Johns Hopkins Hospital Schools of Medical Imaging	2	14	\$2,617.23
The Johns Hopkins University	2	228	\$42,623.44
Loyola College	1	14	\$2,617.23
Maryland General Hospital School of Radiologic Technology	1	5	\$934.72
Medix School	3	131	\$24,489.79
Montgomery College	5	96	\$17,946.71
Prince George's Community College	6	45	\$8,412.52
Salisbury University	4	53	\$9,908.08
Towson University	3	107	\$20,003.11
University of Maryland, Baltimore	11	467	\$87,303.28
University of Maryland, Baltimore County	3	15	\$2,804.17
University of Maryland, College Park	1	9	\$1,682.50
University of Maryland Eastern Shore	1	5	\$934.72
Villa Julie College	1	80	\$14,995.59
Wor-Wic Community College	4	71	\$13,273.09
<b>TOTAL</b>	<b>105</b>	<b>2,096</b>	<b>\$391,876.56</b>

### **C. NURSE SUPPORT PROGRAM I (PRIVATE FUNDS)**

In 2001, recognizing the severity of the nurse recruitment and retention issues facing Maryland hospitals, the Health Services Cost Review Commission (HSCRC) implemented a hospital-based initiative designed to increase the number of nurses providing patient care. The initiative, Nurse Support Program I (NSP I), was funded through a 0.1% hospital patient rate increase. Funding for the program was limited to the lesser of the hospital's request or 0.1% of the hospital's previous year's gross patient revenue. Eligibility to submit proposals was restricted to Maryland hospitals. At the same time, cooperative arrangements among hospitals, high schools, colleges, job training agencies, and nursing organizations were strongly encouraged.

Implemented on July 1, 2001, the NSP I was authorized for five years and has recently been extended for a sixth year with an anticipated end date of June 30, 2007. As of April 2006, approximately \$36 million has been provided through NSP I to the hospitals for recruitment and retention efforts.

Hospital programs and strategies have consisted of:

#### Education

- Direct tuition or other financial support for nursing students who agree to work in Maryland hospitals after graduation
- Long-term career advancement programs
- Specialty credentialing for nurses (i.e., OR, OB, CCU, ICU)
- Orientation and training for new nursing graduates and nurse specialty positions
- Management development and patient care supervisory skills for staff nurses

#### Recruitment and Retention

- Programs designed to attract new nurses to the field (outreach to high school students, career fairs, internship programs)
- Programs to increase the number of student nurses graduating and working in Maryland hospitals
- Nurse refresher courses to attract professionals back into the nursing profession

#### Workplace Issues

- Developing new approaches to staffing, scheduling, allocation of patient care
- Addressing the work environment and quality of patient care; redefining the role of the nurse professional; improving relationships/interactions between physicians and nurses

In April 2006, the HSCRC approved the extension of NSP I for an additional year to June 30, 2007. During the extension year, HSCRC staff will evaluate NSP I and make recommendations for potential change in the following areas:

- Development of a uniform financial reporting framework in order to analyze the program's cost and to allow comparison of expenses between various programs.
- Development of standardized metrics and reporting matrix for each program type to analyze the costs and outcomes of each program utilizing a common denominator.

- Limitation of the type of expenses that would be funded by NSP I to activities that are most congruent with the NSP I program goals.
- Redesign of NSP I to complement NSP II and to eliminate duplication of efforts between the two programs.
- Exploration of the use of a pooling mechanism for funds which would require hospitals to demonstrate the effective use of funds before additional funds would be distributed.

#### **D. NURSE SUPPORT PROGRAM II (PRIVATE FUNDS):**

At its May 4, 2005 meeting, the Health Services Cost Review Commission (HSCRC) approved funding to establish the Nurse Support Program II (NSP II) to increase the number of bedside nurses in Maryland hospitals and the nurse faculty necessary to train these nurses. NSP II is an innovative 10-year program that annually will provide approximately \$8.8 million to support nursing programs. Through NSP II, hospitals will assist Maryland higher education institutions to increase the supply of critically needed nurses in the State. Funding for NSP II is provided through a 0.1% increase to the rate structure of all hospitals retroactive to July 1, 2005.

Data obtained through the Nursing Enrollment Capacity Surveys conducted by the Maryland Higher Education Commission assisted in the design of the Nurse Support Program II (NSP II). Information from the survey guided the establishment of Competitive Institutional Grants and Statewide Initiatives funded through NSP II. Many of the resources and strategies identified in the surveys by Maryland's nursing deans and directors are eligible for funding through NSP II. These include: (1) the additional resources necessary to expand Maryland's nursing program enrollments, and (2) effective strategies to increase nurse faculty as well as improve student retention and graduation.

In addition, a small group of advisors was assembled to help guide the process of gathering information to more fully understand the nurse faculty shortage, devise methods of addressing the shortage, and discuss an evaluation process of the proposed methods. As described below, two distinct but complementary programs were crafted to address the multi-faceted issues surrounding the nursing and nurse faculty shortage: 1) Competitive Institutional Grants and 2) Statewide Initiatives.

In the 2006 legislative session, Governor Ehrlich introduced legislation (SB 230/HB 322) to create a non-lapsing special fund for the NSP II program so that funds can be carried forward to be awarded in future years. Because the grants can be issued for periods of up to five years, it will be necessary to reserve some of the funds for out-year grant payments. If the entire \$8.8 million is awarded in the first year, no new awards can be made for the next five years. In addition to establishing the fund, the legislation requires that the guidelines established for NSP II provide that a portion of the Competitive Institutional Grants and Statewide Initiatives be used to attract and retain minorities to nursing and nurse faculty careers in Maryland.

The HSCRC contracted MHEC to administer the NSP II because of its expertise in the administration of grants and scholarships. As well as providing the programmatic and administrative support necessary to successfully administer the NSP II program, MHEC will also administer the NSP II non-lapsing special funds account. As the coordinating board for all

Maryland institutions of higher education, MHEC will contribute its extensive experience and expertise with (1) the management of institutional grants, (2) the administration of student financial aid, and (3) the collection, review, and evaluation of programmatic and financial data from Maryland's higher education institutions. In addition, MHEC is responsible for working collaboratively with Maryland's colleges, universities, and community colleges to address Maryland's workforce needs, including the State's critical nursing shortage.

Competitive Institutional Grants: The Competitive Institutional Grants are designed to increase the structural capacity of Maryland nursing schools through shared resources, innovative educational designs, and streamlined processes to produce more nurse faculty. Eligible applicants for Competitive Institutional Grants are:

- Consortia of Maryland higher education institutions with nursing degree programs and Maryland hospitals;
- Individual Maryland higher education institutions with nursing degree programs; and
- Partnerships of Maryland higher education institutions with nursing degree programs.

In the first round of funding, applicants were asked to apply for one or more of the four types of competitive grants identified below.

- 1) Initiatives to Expand Maryland's Nursing Capacity through Shared Resources
- 2) Initiatives to Increase Maryland's Nursing Faculty
- 3) Initiatives to Increase Nursing Student Retention
- 4) Initiatives to Increase the Pipeline for Nursing Faculty

In the first round of funding, twenty-six proposals for the Competitive Institutional Grants were received by the due date. An eight-member review panel evaluated each proposal based on the criteria set forth in the request for applications, the comparative outcomes of each initiative, geographic distribution across the State, and the racial diversity of program participants. The review panel unanimously agreed to recommend seven of the twenty-six proposals for funding

**Figure 15** provides a summary of the seven funded Competitive Institutional Grant initiatives. These programs were deemed to best address the multiple aspects of the nursing shortage by accelerating the number of ADN graduates, increasing the pipeline of ADN to BSN students, and creating pathways to nursing faculty positions through MSN and doctoral programs. The first-year funding for the seven Competitive Institutional Grant proposals is \$1,380,595 with a five-year total of \$6,170,497.

Figure 15

<b>COMPETITIVE INSTITUTIONAL GRANTS FUNDED IN THE FIRST YEAR OF NSP II</b>					
<b>Institution</b>	<b>Consortium Members</b>	<b>Program Description</b>	<b>Duration</b>	<b>Year 1 Funding</b>	<b>Total Funding</b>
Anne Arundel Community College	Villa Julie College, College of Southern Maryland	RN to BSN concurrent enrollment option for 48 additional students	3 yrs.	\$200,000	\$443,074
College of Southern Maryland	Calvert Memorial Hospital, Civista Medical Center, St. Mary's Hospital	Increase faculty Student retention initiative Transition of new nurses into hospital setting Increase enrollment by 25% (50 students)	5 yrs.	\$150,000	\$1,075,000
Coppin State University	Maryland General Hospital, Kernan Hospital, Union Memorial Hospital	Master's preparation for 40 hospital-based nurses  Recruitment of 9 into faculty positions	5 yrs.	\$110,000	\$560,000
Harford Community College	Upper Chesapeake	Fast-track 15 month ADN program for 96 additional graduates Student retention initiatives	4 yrs.	\$128,057	\$662,792
University of Maryland School of Nursing	UMMC, Franklin Square Hospital	Master's preparation of 180 hospital-based nurses	5 yrs.	\$350,000	\$1,325,000
University of Maryland School of Nursing	None	Practice-focused doctoral program for 125 – 184 nurses	5 yrs.	\$175,000	\$1,020,000
Villa Julie College	Carroll Hospital Center, Union Memorial Hospital, Upper Chesapeake	RN-BSN Program. Increasing baccalaureate nurse graduates. 120 BSN students & 250 RN-BSN students	4 yrs.	\$267,538	\$1,084,631
<b>Total Competitive Institutional Grant Funding</b>				<b>\$1,380,595</b>	<b>\$6,170,497</b>



Provides below is a breakdown on the projected outcomes from the seven Competitive Institutional Grant initiatives funded in the first round of NSP II. In total, over 900 additional nursing enrollments are projected in the nursing programs offered by these institutions.

**Projected Additional Nursing Enrollments from Competitive Institutional Grant Initiatives Funded through NSP II**

<b>Registered Nursing Programs</b>	<b>Additional Enrollments</b>
ADN	146
RN-BSN	298
BSN	120
<b>Subtotal</b>	<b>564</b>
<b>Graduate Nursing Programs</b>	
MSN	220
DPN	125-184
<b>Subtotal</b>	<b>345-404</b>
<b>TOTAL</b>	<b>909-968</b>

Statewide Initiatives: The Statewide Initiatives supplies funds to finance nursing education by providing tuition assistance, living expenses, as well as other financial incentives, to encourage more individuals to become nurses and nurse faculty. The Statewide Initiatives are distributed through an application process. Statewide Initiatives are as follows:

- 1) Graduate Nursing Faculty Scholarship and Living Expenses Grants are available for eligible students who are sponsored by Maryland higher education institutions to complete the graduate education necessary to become qualified nursing faculty. All Maryland colleges, universities, and community colleges offering nursing degree programs may sponsor students for Graduate Nursing Faculty Scholarship and Living Expenses Grants to ensure that grant recipients prepare for the specific types of nursing faculty positions necessary to expand the nursing programs. Institutions without graduate-level nursing programs may sponsor students who will maintain close connections with the institutions and join their nursing faculty ranks upon graduation.

The maximum total award per graduate student is \$26,000 for tuition and fees and \$50,000 for living expenses. Each year, a full-time student may receive a scholarship of up to \$13,000 and \$25,000 for living expenses. Students receiving the scholarship and living expenses grant must commit to (1) completing the required graduate program within a maximum of two years for full-time students and (2) working as nursing faculty at a Maryland college or university upon program completion.

- 2) New Nursing Faculty Fellowships are available for newly hired faculty to expand Maryland's nursing programs. Maryland institutions with nursing degree programs may nominate an unlimited number of newly hired full-time tenured or tenure-track faculty members or full-time clinical-track faculty who have a long-term contract and will be serving as nursing faculty at the college or university. The maximum amount of the fellowships will be \$20,000, with \$10,000 distributed the first year and \$5,000 in each of the next two years, assuming continuous employment in good standing. The fellowships

may be used to supplement salaries or assist new nursing faculty with professional expenses, such as professional development, loan repayment, and other relevant expenses.

- 3) Statewide Initiative funds may also be used to supplement the funding available for the State Nursing Scholarship and Living Expenses Grants to assist students who are on the waiting list for this scholarship program.

The HSCRC set aside \$2,885,600 for Statewide Initiatives to be awarded in round one for Graduate Nursing Faculty Scholarship and Living Expenses Grants and New Nursing Faculty Fellowships. While the Scholarship awarding process is not complete at this time, 16 individuals were offered awards for the Graduate Nursing Faculty Scholarship. Because of the late start of the program, late applications will be accepted from Competitive Institutional Grant project participants. Five new faculty members were awarded the New Nursing Faculty Fellowships. The total first year funding for the New Nursing Faculty Fellowships is \$50,000.

Of the total of \$4,266,295 allocated for year-one funding for the NSP II, approximately \$2.6 million will be carried forward to be used for future initiatives to increase the number of qualified bedside nurses in the State.

#### IV. RECOMMENDATIONS

Based on the findings of the *Maryland Nursing Program Capacity Study*, the Maryland Higher Education Commission (MHEC) is proposing recommendations to address the nursing shortage in Maryland. Included are the five recommendations described below. In addition, MHEC is endorsing recommendations presented in the “*2005 Annual Report of the Statewide Commission on the Crisis in Nursing*”. In combination, these recommendations will: (1) increase nursing education capacity and (2) modify financial aid and other financial incentives to increase nurses and nurse faculty.

##### **1. Increase access to nurse educator programs throughout the State.**

This recommendation will address the need for additional nurse educator courses and programs throughout the State. Although a master’s degree in nursing is a prerequisite for most nurse faculty, many of Maryland’s graduate level nursing programs are not designed for the primary purpose of preparing nurse faculty. One strategy for increasing the supply of nurse faculty may be to modify existing graduate nursing programs by offering nurse educator tracks that include the education courses necessary to prepare nurse faculty.

Other strategies for increasing access to nurse educator programs were reported by Maryland nursing deans and directors in the Nurse Capacity Survey. Recommended strategies include: (a) developing graduate level nurse educator courses and programs, (b) creating 1-year MSN programs designed to prepare nurse faculty, (c) offering MSN programs at regional higher education centers (RHEC); and (d) creating on-line MSN programs.

##### **2. Appoint an appropriate group to develop a statewide campaign to recruit individuals to become nurse faculty.**

A statewide campaign to recruit individuals to become nurse faculty will increase the supply of faculty that is so critical to the expansion of Maryland’s nursing programs. Proposed is a campaign to educate individuals about the opportunities and advantages of pursuing a career as nurse faculty in Maryland. Beginning in FY 2007, scholarships, living expenses grants, and new faculty fellowships became available through the Nurse Support Program II for those interested in pursuing the graduate nursing programs necessary to become nurse faculty. Currently, these new financial incentives are not widely known or utilized.

A statewide campaign is necessary to increase enrollments in graduate nursing programs. In contrast to registered nursing (RN) programs, program capacity has not been reached at most master’s level nursing programs. When asked in the telephone survey whether master’s nursing programs at their institutions have reached their current enrollment capacity, at least three of the six institutions said “no”. As one nursing dean stated, for the MSN program, the university “*has trouble recruiting [students] up to the maximum*”.

From FY 2002 to FY 2004, there was a decline in the number of graduates of masters and doctorate level nursing programs. The downward trend was reversed in FY 2005, but did not reach the level reported in FY 2001. This is particularly significant, because graduate level

nurses are candidates for nursing faculty positions. Decreased production from graduate nursing programs affects the supply of eligible nurse faculty. Insufficient nurse faculty limits the ability of Maryland higher education institutions to respond to the increasing demand for nurses in the State.

**3. Charge presidents of higher education institutions with nursing programs to address the nurse faculty salary issue.**

This recommendation will address the fundamental unresolved issue of noncompetitive compensation for nurse faculty. Acquiring nurse faculty with the required graduate nursing degrees is a formidable challenge even at current enrollment levels. Frequently, nursing program expansion is limited by the shortage of qualified nurse faculty, particularly clinical faculty in specialties such as pediatrics, obstetrics, psychiatric, and medical/surgical. Nursing deans and directors report that there are insufficient nurses with at least a MSN degree to qualify as nurse faculty. Those with these credentials are difficult to attract and retain as nurse faculty, in large part, because of non-competitive salaries and benefits for nurse faculty. According to the nursing deans and directors, nurses frequently take substantial salary cuts when they become nurse faculty. The current nurse faculty shortage will be exacerbated by upcoming retirements among an aging nurse faculty population. According to Maryland's nursing deans and directors, a nurse faculty crisis is looming because of these retirements. At a time when nurse faculty are needed to expand nursing enrollments, it is feared that nursing programs will find it difficult to merely replace the retiring faculty who taught existing levels of nursing students.

**4. Support efforts to maximize the utilization of clinical sites for nursing students in Maryland.**

It will be a challenge to secure the additional clinical sites necessary to expand Maryland's nursing enrollment capacity, particularly clinical sites in medical specialties such as pediatrics, obstetrics, psychiatric, and medical/surgical. Maximum utilization of clinical sites will be essential, particularly in regions of the State in which several nursing programs are utilizing a limited number of sites. Coordinating and/or centralizing the scheduling of clinical sites is just one of the strategies identified by nursing deans and directors to maximize the utilization and efficiency of clinical sites. Currently, the Maryland Hospital Association (MHA) is spearheading an initiative to establish a central, coordinated schedule for clinical sites shared by multiple nursing schools. Another strategy for increasing the availability of clinical sites is more extensive use of long-term care facilities for clinical sites. Because of increased demand for and limited availability of clinical sites, business can not be conducted as usual. Clinical sites must be shared by multiple nursing programs and, to the extent possible, utilized 24/7.

**5. Explore revising the Health Personnel Shortage Incentive Grant (HPSIG) Program to focus on the areas of greatest shortage.**

An over-arching obstacle to expanding the enrollment capacity of nursing programs is the high cost of delivering nursing programs. In the Nurse Enrollment Capacity Survey, most

nursing deans and directors reported that their nursing programs do not break even financially because of: (1) the high cost of classroom and lab facilities, and (2) low student:instructor ratios. This is a significant impediment to the expansion of Maryland's nursing programs. At some research universities, outside research grants subsidize the cost of their undergraduate nursing programs. This recommendation is to revise the Health Personnel Shortage Incentive Grant (HPSIG) Program to provide meaningful financial incentives for Maryland higher education institutions to produce additional nursing graduates. The proposal is to consider redesigning the HPSIG Program in order to direct institutional grants to Maryland nursing programs and a few other healthcare programs in critical demand.

**6. Implement the Workforce Shortage Student Assistance Grant Program and request additional funding to increase scholarship award amounts.**

The implementation of the workforce shortage financial aid program will give the Maryland Higher Education Commission (MHEC) the flexibility to better target critical occupations in Maryland to address workforce needs and provide a greater incentive for students to go into specific designated occupations. With additional funding, MHEC will have the flexibility to increase financial aid award amounts to encourage students to pursue programs in high demand fields. A full-time nursing student attending a four-year institution in Maryland will qualify for a financial aid award ranging between \$4,000 and a maximum established by the Commission (capped at \$9,000 for academic year 2007-2008). Additional funding also will enable MHEC to award financial assistance to additional nursing students in response to Maryland's increased need for nurses.

**Additional Recommendations:** In addition, the Maryland Higher Education Commission is endorsing the following recommendations from the “*2005 Annual Report of the Statewide Commission on the Crisis in Nursing*”. Excerpted from this report are the recommendations related to: (1) increase nurse faculty, (2) improve nursing student matriculation and program completion, (3) increase the diversity of the nursing profession, and (4) expand collaborative nursing recruitment strategies. Highlighted in bold are recommendations related to financial aid and other financial incentives.

1. To address the nurse faculty shortage, one must review faculty recruitment and retention, increase state funding and faculty compensation, maximize use of existing resources, and improve data collection and dissemination.
  - a. Continue to promote faculty roles to the nursing population using career fairs, articles, seminars, etc.
  - b. Recognize clinical practice as a valid route for faculty contributions in lieu of research and publication.
  - c. Continue to prime the pipeline for future faculty.
    - i. Broaden options for interested nurses to become qualified to teach – teacher certification, education tracks at the master's and doctorate level, etc.

- ii. Make opportunities for advancement from registered nurse to baccalaureate degree in nursing programs more widely available.
  - iii. Expand access to master's degree programs throughout the State.
  - iv. Expand and promote associate to master's degree programs in nursing.
  - v. **Offer scholarship and other financial incentives to nurses who will complete advanced degrees and teach.**
  - vi. Fill existing full-time faculty vacancies and fund additional positions as needed to comply with MBON requirements and accommodate increased enrollments.
- d. Implement joint-appointments and other personnel assignment strategies to support and complement full-time faculty.
- e. Investigate flexible scheduling options for faculty.
- f. Develop a mechanism for central advertising using a shared Web site for the posting of full-, part-time, and adjunct faculty.
- g. Explore the potential for shared faculty appointment for specialty services, e.g., psychiatry, pediatrics, obstetrics, and community health.
- h. **Increase State Funding**
  - i. **Increase nursing program funding to reflect market compensation trends and to accommodate increasing program enrollments.**
  - ii. **Fully fund the Health Personnel Shortage Incentive Grant Program.**
- i. **Faculty Compensation**
  - i. **Increase faculty compensation to make the faculty role a viable career option.**
  - ii. **Develop a mechanism to sustain market pay rates for nurses in faculty roles.**
  - iii. **Adjust benefit options as needed to remain competitive.**
- j. Maximize Use of Existing Resources
  - i. Develop alternative class and clinical schedules to optimize existing facilities.
  - ii. Regionalize coordination of clinical schedules
  - iii. Explore alternatives for clinical observation and experiences.
  - iv. Share best practices.
- k. Improve Data Collection and Dissemination
  - i. Enhance annual Maryland Board of Nursing (MBON) data collection and reporting
    - Develop definitions for filled and vacant positions and full and part-time status that reflect the number of credits or other measures of academic workload.
    - Collect data by faculty position type (clinical instructor, assistant professor, etc.)

- ii. Require the Maryland Board of Nursing (MBON) and the Maryland Higher Education Commission (MHEC) to jointly monitor supply and demand of faculty.
    - Report on the status of nursing education enrollments, graduations, filled and vacant faculty positions (by FTE, position type and overload hours).
    - Report trend aggregate data by program type and make it available to nursing program directors, the General Assembly, and other interested parties on an annual basis.
    - Make recommendations for adjustment and develop action plans as needed.
  - iii. Consider collecting faculty salary ranges and average starting salaries, and reporting aggregate data by rank and program type.
  - iv. Require MBON and MHEC to jointly monitor and report on student attrition trends by program type and recommend action as needed.
2. Improve prospective students' matriculation into and completion of nursing programs.
    - a. **Find nursing tuition and scholarship sources, other than the State, to remove financial barriers to pursuing nursing as a profession.**
    - b. Enlarge program capacity to increase the number of graduates.
  3. The value of diversity of the nursing professional and to health care outcomes must be recognized and efforts made to increase diversity in the nursing workforce.
    - a. Focus on attracting under-represented ethnic and gender populations by increasing activities with Baltimore City public school children.
    - b. Focus on attracting males through community youth groups such as the scouts, Boys and Girls Clubs, etc.
  4. Use collaboration as a recruitment strategy as well as to involve stakeholders and groups interested in addressing shortage issues.
    - a. Promote and encourage males to enter the nursing profession, starting with recruitment in middle to high schools, by having male nurses visit schools to discuss male opportunities within the nursing arena.
    - b. Continue youth hands- on, patch and shadow programs.
    - c. Continue the development of partnering relationships with secondary school administrators and counselors.
    - d. Participate in the integration of healthcare content in elementary and higher-grade curricula, e.g. via the Speakers Bureau.
    - e. Recruitment needs to start at middle and high schools levels, and there should be re-evaluation of curricula that prepare students for math and sciences.

### Graduates of Nursing Programs by Institution -- FY 1996 – FY 2005

School Name	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<b>Licensed Practical Nursing (LPN)</b>										
Allegany College of Maryland	9	14	15	11	21	22	23	61	41	44
Anne Arundel Community College	0	0	0	0	0	7	4	9	2	0
Baltimore City Community College	0	0	0	14	16	7	9	11	14	15
Carroll Community College	0	0	0	0	0	0	0	9	25	33
Cecil Community College	14	19	5	6	5	5	7	4	7	7
Chesapeake College	0	0	0	0	6	10	11	10	4	0
College of Southern Maryland	21	30	21	18	11	13	16	10	8	10
Columbia Union College	0	0	0	0	0	0	0	0	0	0
Community Colleges of Balt County	0	0	0	0	0	0	0	0	0	13
Frederick Community College	16	9	10	0	0	0	8	18	31	17
Hagerstown Business College	0	0	0	0	0	0	0	0	0	0
Hagerstown Community College	0	0	0	0	0	0	0	0	23	25
Harford Community College	27	31	7	14	13	2	10	8	2	5
Howard Community College	21	26	26	25	22	32	23	17	24	24
Prince George's Community College	0	0	11	20	8	12	7	1	6	0
Wor-Wic Community College	36	42	33	34	34	38	43	51	1	48
	<b>144</b>	<b>171</b>	<b>128</b>	<b>142</b>	<b>136</b>	<b>148</b>	<b>161</b>	<b>209</b>	<b>188</b>	<b>241</b>
<b>Associate Degree in Nursing (ADN)</b>										
Allegany College of Maryland	92	70	79	60	62	42	52	45	81	85
Anne Arundel Community College	66	74	87	77	75	92	88	76	82	95
Baltimore City Community College	35	39	29	26	27	32	31	18	30	39
Carroll Community College	0	0	0	0	0	0	0	0	0	19
CCBC - Catonsville	58	54	71	58	39	0	0	0	0	0
CCBC - Essex	89	88	69	83	67	0	0	0	0	0
Cecil Community College	41	44	37	31	29	23	29	26	51	45
Chesapeake College	0	0	0	0	27	24	20	22	36	36
College of Southern Maryland	83	60	58	51	50	50	52	55	40	73
Community Colleges of Balt County	0	0	0	0	0	111	141	135	170	196
Frederick Community College	43	43	44	47	38	39	40	51	62	52
Hagerstown Community College	23	27	27	29	28	20	33	36	41	55
Harford Community College	63	70	64	77	65	60	75	77	95	79
Howard Community College	74	74	64	40	61	30	47	50	38	65
Montgomery College-All Campuses	0	0	0	0	0	49	61	94	96	91
Montgomery College-Germantown	2	4	1	0	0	0	0	0	0	0
Montgomery College-Rockville	5	8	3	1	0	0	0	0	0	0
Montgomery College-Takoma Park	76	68	95	63	74	0	0	0	0	0
Prince George's Community College	92	88	80	87	115	90	84	90	87	88
Wor-Wic Community College	40	32	33	38	34	27	36	35	47	49
	<b>882</b>	<b>843</b>	<b>841</b>	<b>768</b>	<b>791</b>	<b>689</b>	<b>789</b>	<b>810</b>	<b>956</b>	<b>1067</b>
<b>Bachelor's of Science in Nursing (BSN)</b>										
Bowie State University	17	28	34	34	27	28	36	29	18	47
Coppin State University	29	37	47	41	58	27	37	27	43	39
Salisbury University	76	55	49	48	37	55	54	56	80	78
Towson University	72	77	82	95	65	61	60	68	84	90
Univ. of Maryland, Baltimore	218	347	358	301	289	255	289	309	333	395
Univ. of MD -Baltimore County	126	6	0	0	0	0	0	0	0	0
Columbia Union College	34	34	30	24	28	17	23	19	34	20
Johns Hopkins University	176	163	173	168	173	194	172	207	161	221
College of Notre Dame of MD	26	43	39	42	45	31	31	35	30	18
Villa Julie College	62	93	73	78	73	59	45	72	82	93
	<b>836</b>	<b>883</b>	<b>885</b>	<b>831</b>	<b>795</b>	<b>727</b>	<b>747</b>	<b>822</b>	<b>865</b>	<b>1001</b>



## Appendix 1

<b>Master's of Science in Nursing (BSN)</b>	<b><u>1996</u></b>	<b><u>1997</u></b>	<b><u>1998</u></b>	<b><u>1999</u></b>	<b><u>2000</u></b>	<b><u>2001</u></b>	<b><u>2002</u></b>	<b><u>2003</u></b>	<b><u>2004</u></b>	<b><u>2005</u></b>
Univ. of Maryland, Baltimore	176	204	183	212	203	221	199	195	148	180
Towson University	0	0	0	0	0	0	0	3	4	9
Salisbury University	5	10	7	11	13	8	5	6	6	7
Coppin State University	0	0	0	0	0	0	8	5	8	4
Bowie State University	13	8	11	7	15	21	18	13	20	8
Johns Hopkins University	21	35	26	38	59	55	55	59	61	74
	<b>215</b>	<b>257</b>	<b>227</b>	<b>268</b>	<b>290</b>	<b>305</b>	<b>285</b>	<b>281</b>	<b>247</b>	<b>282</b>
<b>Doctorate</b>										
Univ. of Maryland, Baltimore	13	19	17	12	10	13	8	5	6	13
Johns Hopkins University	0	0	0	1	4	4	1	1	3	8
Johns Hopkins University	0	0	0	0	0	0	0	0	4	0
	<b>13</b>	<b>19</b>	<b>17</b>	<b>13</b>	<b>14</b>	<b>17</b>	<b>9</b>	<b>6</b>	<b>13</b>	<b>21</b>

Source: Maryland Higher Education Commission (MHEC) – Degree Information System (DIS).

### Fall 2005 Nursing Enrollments by Institution

	<b><u>Enrolled</u></b> <b><u>As of 10/15/05</u></b>
<b><u>Associate Degree in Nursing (ADN)</u></b>	
Allegany College of Maryland	232
Anne Arundel Community College	157
Baltimore City Community College	136
Carroll Community College	89
Cecil Community College	121
Chesapeake College	104
Community College of Baltimore County	566
College of Southern Maryland	223
Frederick Community College	154
Hagerstown Community College	85
Harford Community College	175
Howard Community College	221
Montgomery College	239
Prince George's Community College	205
Wor-Wic Community College	63
<b>Subtotal</b>	<b>2770</b>
<b><u>RN to BSN Programs</u></b>	
Bowie State University	68
College of Notre Dame of Maryland	82
Coppin State University	NR
Johns Hopkins University	
Villa Julie College	55
University of Maryland, Baltimore	NR
<b>Subtotal</b>	<b>205</b>
<b><u>Bachelor's of Science in Nursing (BSN)</u></b>	
Columbia Union College	75
Johns Hopkins University	468
Villa Julie College	133
Bowie State University	75
Coppin State University	120
Salisbury University	136
Towson University	208
University of Maryland, Baltimore	727
<b>Subtotal</b>	<b>1942</b>

Source: 2006 Annual Reports to the Maryland Board of Nursing prepared by Maryland higher education institutions with ADN, RN-BSN, and BSN nursing programs.

### Fall 2005 Program Capacity and Enrollment Statistics by Institution

	Program Capacity	Qualified Applicants	Qualified But Not Admitted	Admitted and Entered
<b><u>Associate Degree in Nursing (ADN)</u></b>				
Allegany College of Maryland	60	131	71	60
Anne Arundel Community College	56	107	51	56
Baltimore City Community College	64	74	26	48
Carroll Community College	54	82	32	55
Cecil Community College	64	166	96	70
Chesapeake College	64	120	56	64
Community College of Baltimore County	176	674	390	180
College of Southern Maryland	60	73		61
Frederick Community College	64	120	56	64
Hagerstown Community College	40	109	68	41
Harford Community College	54	225	156	54
Howard Community College	112	267	154	113
Montgomery College	64	375	303	57
Prince George's Community College	68	94	26	68
Wor-Wic Community College	64	71	7	64
<b>Subtotal</b>	<b>1064</b>	<b>2688</b>	<b>1492</b>	<b>1055</b>
<b><u>RN to BSN Programs</u></b>				
Bowie State University	20	0		0
College of Notre Dame of Maryland	4	57	0	53
Coppin State University	50	11	0	11
Johns Hopkins University				
Villa Julie College	45	178	0	50
University of Maryland, Baltimore	46	135	0	46
<b>Subtotal</b>	<b>165</b>	<b>381</b>	<b>0</b>	<b>160</b>
<b><u>Bachelor's of Science in Nursing (BSN)</u></b>				
Columbia Union College	40	40		40
Johns Hopkins University	150	380	114	147
Villa Julie College	48	104	0	83
Bowie State University	0	0	0	0
Coppin State University	160	602	446	155
Salisbury University	86	90	0	86
Towson University	56	205	112	56
University of Maryland, Baltimore	145	426	193	145
<b>Subtotal</b>	<b>685</b>	<b>1847</b>	<b>865</b>	<b>712</b>

Source: 2006 Annual Reports to the Maryland Board of Nursing prepared by Maryland higher education institutions with ADN, RN-BSN, and BSN nursing programs.