

LOUISIANA CENTER FOR NURSING

A Division of the Louisiana State Board of Nursing

# Nursing Workforce Demand Report

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## Preface

The Louisiana State Board of Nursing – Center for Nursing and the Nursing Supply and Demand Council are proud to present the first statewide Nursing Workforce Demand Study to the members of the Board of Nursing, Legislators, Nursing Community, and other stakeholders interested in learning more about the demand for nurses in Louisiana.

Although we are experiencing the effects of an unsettled economy, nursing continues to be the nation's largest health care profession. There are more than 3.1 million registered nurses (RNs) licensed to practice in the country and the U.S. Bureau of Labor Statistics projections for 2008-2018 indicate that RNs are the fastest growing segment of the healthcare profession. According to the Louisiana Workforce Commission (2011), RNs, licensed practical nurses (LPNs), and nursing assistants (NAs) are considered to be amongst the top demand health care occupations in Louisiana. The Nursing Workforce Demand Report attempts to describe the demand for RNs, APRNs, LPNs, and nursing aides in Louisiana.

We extend our sincere thanks to the 609 employers of nurses throughout the state for taking time to complete the Nurse Employer Survey. We would like to thank the Louisiana State Board of Nursing through the leadership of Mrs. Barbara Morvant, Executive Director, and the Nursing Supply and Demand Council, under the Leadership of Dr. Norann Planchock, for supporting this collaborative effort between the Louisiana Center for Nursing and the Nursing Supply and Demand Council.

We would also like to acknowledge the nursing and health care provider organizations and associations that encouraged their membership and constituents to complete the 2010 Nurse Employer Survey, some of which include the Louisiana State Nurses Association, the Louisiana Organization of Nurse Executives, Senator Joe McPherson, Mr. Joe Donchess and Mr. Jamie Shelton with the Louisiana Nursing Home Association, and Mr. Warren Hebert with the HomeCare Association of Louisiana.

Special thanks goes to two of Louisiana's retired RNs, Mrs. Lisa Deaton and Mrs. Anita Hansberry, for volunteering their time to assist with making calls to employers prior to the dissemination of the Nurse Employer Survey, and to Dr. Saviour Nwachukwu, for his direction, assistance, and guidance with database creation, management, data cleaning and verification which allowed for a smooth transition to data analysis. We would like to thank Dr. Jennifer Nooney, formerly the Associate Director of Research at the Florida Center for Nursing and currently with the National Center for Health Workforce Analysis (HRSA), for so graciously sharing her expertise in the area of workforce analysis. Finally, we would like to thank Carey Foy, Deputy Executive Director for the Louisiana Workforce Commission and his Leadership Team for their feedback and support of the Nursing Workforce Demand Report.

If you should have any questions or comments related to the Nursing Workforce Demand Report, please email them to Dr. Cynthia Bienemy at the Louisiana Center for Nursing [lcn@lsbn.state.la.us](mailto:lcn@lsbn.state.la.us).

## **Louisiana Nursing Workforce Demand Project Results of the 2010 Nurse Employer Survey**

### Introduction

“It is society’s demand for health care that creates the demand for healthcare institutions and the people they employ, including nurses, who possess unique knowledge and skills that can satisfy this demand” (Buerhaus, Staiger, & Auerbach, 2009, p.57). There are many factors that determine society’s demand for health care, some of which are the incidences of disease and illnesses, population size and age, educational level, economic factors, technology, and organizational structures of health care systems. Accurate information is needed to assess current and future workforce demand and one of the best sources of information about the demand for nurses are employers of nurses. Thus, in September 2010 the Louisiana Center for Nursing (LCN) in collaboration with the Nursing Supply and Demand Council (NSDC) set out to conduct the state’s first Nursing Workforce Demand Project in which the largest employers of nursing personnel were surveyed.

The Nursing Workforce Demand Project was conducted during a time when the country was recovering from one of the greatest economic recessions of our time. In Louisiana, employment fell by 3.3 percent from January 2008 to February 2010 (Bureau of Labor Statistics, 2011). In June 2010, the unemployment rate across the country was at an all time high of 9.5 percent with Louisiana experiencing an unemployment rate of 7.5 percent (BLS, 2011; Joint Economic Committee, 2011). Louisiana has not been hit as hard as other states in terms of unemployment, yet the recession has had a definite impact on our economy.

According to the U.S. Bureau of Labor Statistics, employment opportunities for nurses were expected to grow by about 22 percent between 2008 and 2018. The bureau also reports that overall job opportunities for nurses are "excellent," meaning there are more jobs than there are nurses. In spite of these statistics, nurses have been negatively impacted by the recession. Some health care institutions have placed freezes on hiring nurses; nurses have delayed retirement due to loss of retirement funds; nurses have had to interrupt retirement to return to work; many nurses that were working part-time had to seek full-time positions because their spouses were laid off; and maybe most concerning of all, new nursing graduates are having difficulty finding jobs because of what appears to be an increase in the availability of experienced nurses that do not require costly orientation programs (RWJF, 2010).

Yet, society continues to need healthcare and with the passage of the Affordable Care Act, there could potentially be an additional 32 million American citizens and legal residents added to insurance rosters beginning in 2014. In 2011, the first of the baby boomers began turning 65 and became eligible for Medicare (Alliance for Health Reform, 2011). According to the Bureau for Labor Statistics (2011), the healthcare industry will generate 3.2 million new jobs between 2008 and 2018, largely because of the rapid growth in the elderly population due to aging of the baby boom generation. Ten of the twenty fastest growing occupations are health care related, covering each sector of the nursing workforce: registered nurses (RNs), licensed practical nurses (LPNs), and nursing assistants (NAs).

Thus, it is important for us to be proactive and not reactive in making sure that there is an adequate nursing workforce to meet current and future nurse demand. We cannot plan appropriately without first assessing where we are in terms of the demand for nurses. Louisiana has taken a big step by initiating the collection of nursing workforce data that will equip lawmakers, nurse leaders, the health care industry, health care consumers and others in making health policy decisions that will afford us the infrastructure to assure that there will be an adequate supply of qualified nurses in our state that are prepared to give high quality, patient centered, and cost effective health care to the citizens of Louisiana.

Survey Instruments – The survey instruments used in the Louisiana Nursing Workforce Demand Project were adapted from the employer surveys used by the Florida Center for Nursing in their 2010 Workforce Demand Study (FCN, 2010). Seven different versions of the Employer Survey were developed based upon the unique nursing personnel needs for each of the different types of healthcare industries that were surveyed. The surveys were based upon the Forum of State Nursing Workforce Center’s Minimum Nurse Demand Dataset (2009). The Louisiana Center for Nursing is a member of the Forum and by using the Minimum Nurse Demand Dataset, it is possible to develop reports that compare our nursing workforce statistics with other states across the country using the same data points (Nooney et al, 2010).

In early August, a small sample of nurse employers across the state reviewed drafts of the 2010 Nurse Employer Surveys and gave useful feedback, which was incorporated into the final versions of the surveys. An electronic version and paper and pencil version of each of the surveys were developed and made available to employers based upon their preference. Surveys were either mailed to employers, and/or an electronic form-field version was sent via email to employers. Employers that preferred to receive the surveys electronically could type their responses directly into the survey and return it as an email attachment.

### Population Lists

A census survey of all healthcare facilities within the healthcare industry groups selected for inclusion in the current study, as opposed to random or other types of sample surveys, was conducted in an effort to obtain information that is as accurate as possible at the regional level. A directory listing all facilities located in Louisiana that are licensed by the Department of Health and Human Services (DHH) within a particular healthcare industry served as the source of the population lists.

### Types of Health Care Facilities Surveyed

Employers of nurses from across the state were asked to complete the nurse employer survey. Ideally, all employers of nursing personnel would have been surveyed, but this was not feasible in terms of money and available manpower. Thus, health care industries included in the Nursing Workforce Demand Project were determined to be employers of a large proportion of nurses in the state.

*Hospitals* are healthcare industries known and licensed as general medical and surgical hospitals primarily engaged in providing diagnostic and medical treatment (both surgical and nonsurgical) to inpatients with any of a wide variety of medical conditions. These establishments maintain inpatient beds and provide patients with health care services and other services that are necessary to meet their healthcare needs. According to the Louisiana Workforce Commission, hospitals (including psychiatric hospitals) continue to be the largest employer of nurses, employing 61 percent of RNs in the state, 35 percent of LPNs, 34 percent of NAs, 39 percent of psychiatric aides, and one percent of home health aides (LWC, 2011). A registry with all licensed hospitals in Louisiana was obtained from DHH. The study design called for facility-level reporting, yet there are licensed hospitals in Louisiana that are part of multi-hospital systems. The preference was that each facility would complete one survey, yet in some hospital systems, the chief nursing officer and/or chief operating officer elected to aggregate data and complete one survey for multiple facilities.

*Psychiatric Hospitals* comprise establishments known and licensed as psychiatric and substance abuse hospitals primarily engaged in providing diagnostic, medical treatment, and monitoring services for inpatients who suffer from mental illness or substance abuse disorders. A number of the psychiatric hospitals listed in the DHH registry in 2010 were no longer open (LWC, 2011). Most notably, psychiatric hospitals in the New Orleans area that were open prior to Hurricane Katrina were either closed or had relocated post Hurricane Katrina.

*Long Term Care and Skilled Nursing Facilities* are primarily engaged in providing inpatient nursing and rehabilitative services (LWC, 2011). The care is generally provided for an extended period of time to individuals requiring nursing care. These establishments have a permanent core staff of registered or licensed practical nurses that, along with other staff, provide nursing and continuous personal care services. Based on the 2008 estimate, nursing and residential care facilities employ 6 percent of RNs in the state, 26 percent of LPNs, 48 percent of NAs, 37 percent of home health aides and 18 percent of psychiatric health aides. In the current study some skilled nursing facilities (SNF) were actually units or divisions within some of the larger hospitals and the preference for the healthcare system was to include data related to the SNF on the hospital survey.

*Home Health Care Agencies and Hospices* provide skilled nursing services in the home, along with a range of other services such as personal care services; homemaker and companion services; physical therapy; medical social services; medications; medical equipment and supplies (LWC, 2011). Based on the 2008 estimate, ambulatory healthcare services, which includes home health, hospice, dialysis, and surgery centers employs 21 percent of the RNs in the state, 23 percent of the LPNs, 10 percent of the NAs, 32 percent of the home health aides and 3 percent of the psychiatric aides (LWC, 2011).

*Ambulatory Health Care Facilities* provide health care services directly or indirectly to ambulatory patients and do not usually provide inpatient services. Health practitioners in this subsector provide outpatient services, with the facilities and equipment not usually being the most significant part of the production process (LWC, 2011). With the passage of the Affordable Care Act there is the potential for thousands to be added to the insurance rosters which has placed a lot of interest on the number of advanced practice registered nurses (APRNs), more specifically nurse practitioners (NPs), that are available to provide primary care to the citizens of our state. Members of NSDC felt that it would be helpful to include Federally Qualified Healthcare Centers (FQHCs) and Rural Health Clinics in the current study because NPs serve as the primary care provider in many of these facilities.

There has been an increase in the number of nurses employed by *ambulatory surgical centers, dialysis centers, and case management* in Louisiana (LSBN Annual Report, 2010). Therefore they were included in the current study as well. One generic survey was developed for all ambulatory health care facilities.

*Public Health Departments* are government establishments primarily engaged in the planning, administration, and coordination of public health programs and services, including environmental health activities, mental health, categorical health programs, health statistics, and immunization services (LWC, 2011). There are 72 public health units across the state. Louisiana's Public Health Department uses a centralized system in the administration of health care services to the public. Staffing is controlled at the state level and not by individual public health units. The Public Health Department was undergoing major budget cuts and layoffs when the 2010 Nurse Employer Survey was conducted. The Chief Public Health Nurse felt that facility level data would not be as accurate as the aggregate data maintained in the Office of Public Health. Thus, in an effort to obtain the most accurate data available, aggregate data was used to complete one survey that would be representative of the 72 public health units.

#### Nursing Personnel Employed by the Healthcare Industries Surveyed

The industries surveyed in this study, when combined, employed over 34,252 RNs, 16,419 LPNs, and 32,508 nurse aides (nurse aides, orderlies, home health and psychiatric aides). This is equivalent to approximately 86 percent of RNs, 84 percent of LPNs, 91 percent of nurse aides, 69 percent of home health aides, and 60% of psychiatric aids employed in the state.

#### Dissemination of the Employer Survey

*Preparing for the Launch of the 2010 Nurse Employer Survey* – On August 26, 2010 the Center for Nursing staff and two retired RN volunteers began making calls to over 1500 healthcare agencies and facilities licensed by the state of Louisiana using directories obtained from DHH and the Chief Public Health Nurse. These calls were made to: (1) validate the information that was in the directory; (2) obtain contact information for the person who should receive the survey (i.e., Administrator, Chief Nursing Officer or Human Resource Director); and (3) determine if the recipient of the survey preferred a paper and pencil version or an electronic version of the survey (Dillman, Smyth, and Christian, 2009). On September 8<sup>th</sup> a temporary agency staff person was hired to assist in the calling process. Contact information was updated for approximately 40 percent of the 1500 healthcare facilities listed in the registry (i.e., change of address, change in Administrator, Chief Nursing Officer or Director of Nursing) and over 100 healthcare facilities were no longer in operation. We found that approximately 15 percent of the agencies were owned by corporations, which may or may not have been located in Louisiana. In some cases, requests were made by employers to send the surveys to their corporate offices. Approximately one-third of the agencies indicated that they preferred to receive an electronic version of the survey. Overall, the researchers felt that calling the healthcare agencies and facilities prior to sending out the Nurse Employer Surveys contributed to the high return rate experienced in the current study.

*Organizational Support of the Nurse Employer Survey (Demand Project)* – On September 13, 2010 prior to sending out the nurse employer surveys, an email alert along with a Louisiana Center for

Nursing Newsletter Update describing the Nurse Demand Project and Nurse Employer Survey was sent out to Presidents and Chairs of over 69 nursing organizations and/or associations in Louisiana, as well as Chief Executive Officers and Chief Nursing Officers for Hospitals, Long Term Care Facilities, Home Care Agencies, Hospices, Ambulatory Care Facilities, Federally Qualified Healthcare Centers, Dialysis Centers, and Rural Clinics. Alerts also went out to the Chief Executive Officers for the Louisiana Nursing Home Association, the Louisiana Home Health Care Association, and the Vice-President for Policy Development at the Louisiana Hospital Association requesting their support for the Nursing Workforce Demand Project.

*Distribution of the 2010 Nurse Employer Survey* - The 2010 Nurse Employer Survey was officially launched on Thursday, September 23, 2010. Over 1400 nurse employers across the state received the survey either electronically or via first class mail. Five hundred and eighty-three (583) surveys were sent electronically by the Louisiana State Board of Nursing (LSBN) IT Staff on September 23<sup>rd</sup> and 24<sup>th</sup>. This was a significant endeavor because of the complexity of merging the various electronic files. Seven different surveys were merged with 7 different personalized cover letters for each of the 583 healthcare agencies or facilities. The Center for Nursing Staff worked closely with Louisiana State University Health Sciences Center Auxiliary Enterprises in New Orleans to mail out 888 paper and pencil surveys which also were closely monitored to make sure that the correct survey was attached to the correct personalized cover letter for the 888 healthcare agencies or facilities. Verification between the printing company and LCN staff was performed throughout this process either electronically or per phone conversations.

#### Data Analysis

Data were analyzed using Microsoft Excel, SAS (version 9.1) and the Statistical Package for the Social Sciences (version 18). Percentages and means were calculated based on industry and nurse category (RN, APRN, LPN, NA), as appropriate. Respondents were asked to provide information on budgeted full-time equivalents (FTEs) and vacant FTEs, as well as full and part-time filled positions, vacancies, and separations as of June 30, 2010. All rates (vacancy, turnover, and growth rates) are based on survey responders.

#### Definition of Terms

##### *Vacancy Rates and Number of Vacancies*

Full-time equivalent vacancy rates are the standard metric used by workforce planners to understand the amount of nursing labor that is currently demanded by employers (Reiner et al, 2005). After a review of the reported full and part-time positions and the full and part-time FTEs, it was decided that FTEs would be used to calculate vacancy rates for the following reasons: FTE is the standard metric used by workforce planners; a comparison of the reported position data and the FTE data indicated that overall the majority of the healthcare industries reported information in terms of FTEs; and the differences between the calculated FTEs and reported FTEs were very small. The number of vacancies was imputed for non-respondents to estimate how many individual nurses are currently demanded in seven of the eight industry groups that were surveyed. This information was not computed for public health units because one survey was completed for the 72 public health units across the state, thus there were no non-responders.

The following formula was used to calculate vacancy rates: FTE position vacancy rate = the sum of vacant FTEs / the sum of budgeted FTEs x 100 (Reiner et al, 2005). Only when FTEs were left blank did we attempt to estimate FTEs based on the employer's reported head counts for full-and part-time positions that were filled or vacant.

#### *Turnover Rates*

Turnover rates are an indicator of the stability of the workforce in a particular position (Reiner et al., 2005). In the current study, turnover will be defined as the number of individuals in RN, APRN, LPN or NA positions leaving employment within a specified time period divided by the total number of individuals employed in these positions during that time period, expressed as a percentage. Turnover rates were computed using information on separations between July 1, 2009 and June 30, 2010. For annual turnover rates, the average number of employees for the year was estimated by adding the number of employees holding a designated nursing position at the beginning and end of the year and dividing by two (Reiner, et al., 2005).

#### *Growth Rates*

Healthcare industries surveyed were asked to give information about the number of new positions expected through 2012 and the total number of positions in 2010 (baseline). Percentage growth rates for the next two years were determined by summing the total number of new positions expected through 2012, dividing that number by the total number of positions in 2010 (baseline), and multiplying by 100.

Vacancy rates, turnover rates and growth rates were calculated based on information obtained from responders to the Employer Survey.

#### Constructing Estimates for Non-Respondents

Although we do not have information on vacancies and expected growth for non-respondents, it is possible to estimate these values for non-respondents using other information that is available about those facilities that did not complete the 2010 Nurse Employer Survey. The process of assigning an estimated value is called *imputation* (Nooney, 2009). Simple or conditional mean imputation was used to estimate values for non-respondents. Statistical outliers were included in all analyses, as it is likely outliers are present among survey non-responders as well.

*Simple mean imputation* attributes the mean of a variable for respondents in an industry group to each of the non-respondents in that group using no other additional information (Nooney, 2009). The assumption is that non-respondents are similar to the respondent on the variable. This is considered an appropriate method of imputation if there is little response bias. Simple mean imputation was used for the healthcare industries with very small numbers of respondents and non-respondents or where an appropriate conditioning variable could not be identified such as ambulatory surgical care facilities.

*Conditional mean imputation* allows one or more predictive variables to provide direction on the value to impute for a specific case. This method of imputation incorporates information from other variables under the assumption that facilities and agencies that share a characteristic also have similar numbers of vacancies or similar growth expectations (Nooney, 2009). Size, in terms of numbers of



beds, was used as the conditioning variable for hospitals, psychiatric hospitals, and long term care (LTC) and SNF facilities. Whether or not a healthcare facility was located in a Metropolitan Statistical Area (MSA), an indication of whether the facility was in a rural or urban area, was used as the conditioning variable for home health, hospice and dialysis centers.

Because the conditioning variables must be available for all facilities and must be reasonably helpful in predicting the number of vacancies, new positions, and separations among respondents, the investigator was limited to facility size (number of beds) and rurality (MSA vs. non-MSA) as possible predictors. The single best predictor for each group was used when the number of cases was too small or the predictive power of the conditioning variable was unacceptably weak.

## Response Rates and Representativeness

### *Statewide Response Rates*

The percentage of people responding to a survey is the response rate. High survey response rates help to ensure that survey results are representative of the target population (Polit and Beck, 2008). A survey must have a good response rate in order to produce accurate, useful results. Upon final analysis, 1,330 surveys were sent to health care facilities across the state and 609 were returned resulting in an overall 46 percent response rate (see Table 1) which compares favorably to the return rate obtained by other states that have conducted similar nurse demand studies. For example, the Florida Center for Nursing obtained a 31.2 percent return rate for their 2009 employer survey which was lower than the 37.3 percent return rate for the 2007 employer survey. In a study conducted by Baruch and Holtom (2008), the average expected return rate for organizational surveys was found to be 35.7 percent. Return rates for the health care industries surveyed in the current study ranged from a high of 56 percent for hospitals to a low of 19 percent for FQHCs. There was a 50 percent or greater return rate for hospitals, psychiatric hospitals, hospices, and dialysis centers. The return rates for home health, skilled nursing/long term care facilities and ambulatory surgical care centers ranged between 47 and 49 percent. Health care industries having return rates of 25 percent or less were case management, rural health clinics and FQHCs. The 100 percent return rate for the Department of Public Health is considered somewhat of an outlier in that one survey was completed by the Chief Public Health Nurse for the 72 public health units in the state in order to facilitate the accuracy of the information reported. The Louisiana Public Health Department utilizes a centralized system in administration of services and all data related to the nursing workforce is maintained within the administrative office of the Department of Public Health by the Chief Public Health Nurse. The completion of one survey for all of the public health units does not lend itself to analysis at the regional level. Thus, only descriptive analysis will be completed for the public health industry in Louisiana.

**Table 1. Overall and Statewide Response Rate by Healthcare Industry**

Type of Facility	# Facilities Surveyed	Total # Surveys Returned	Return Rate
<b>Hospitals</b>	196	110	56%
<b>Psychiatric Hospitals</b>	46	23	50%
<b>Home Health</b>	216	104	48%
<b>Hospice</b>	131	68	52%
<b>Long Term Care/Skilled Nursing Facility</b>	287	134	47%
<b>Department of Public Health*</b>	*1	*1	*100%
<b>Generic – Case Management</b>	51	12	24%
<b>Generic – Dialysis</b>	142	76	54%
<b>Generic - Rural Health</b>	106	27	25%
<b>Generic - Ambulatory Surgical Care</b>	81	40	49%
<b>Generic – Federally Qualified Health Care</b>	73	14	19%
<b>Overall Statewide Response Rate</b>	<b>1330</b>	<b>609</b>	<b>46%</b>

\*Department of Public Health - One survey was completed by the Chief Public Health Nurse for the 72 Statewide Public Health Units.

### *Regional Response Rates*

Sufficient survey response at the regional level is important in order to produce regional results in future reports. Regional Labor Market Areas (RLMAs) are economically integrated areas in which individuals can live and find employment within a reasonable distance or can feasibly change jobs without changing their place of residence (LWC, 2011). Occupational projections for all occupations are reported by the Louisiana Workforce commission (LWC) according to the eight RLMAs in Louisiana. A map depicting Louisiana’s sixty-four parishes included within the eight RLMAs can be found in Appendix A. Table 2 depicts response rates by health care industry and RLMA. The regional response rates for many of the healthcare industries were sufficient for future stratified data analysis. For example, over fifty percent of the hospitals in seven of the eight RLMAs completed the Nurse Employer Survey. One hundred percent of the hospitals in RLMA 3 and one hundred percent of the psychiatric hospitals in RLMA 8 completed the survey. Response rates by RLMAs were not given for case management, rural health clinics and FQHCs because of the overall low statewide response rates. Regional response rates were also not given for public health.

**Table 2 – Regional Response Rates (%) by Healthcare Industry**

<b>Setting</b>	<b>Region 1 New Orleans</b>	<b>Region 2 Baton Rouge</b>	<b>Region 3 Houma</b>	<b>Region 4 Lafayette</b>	<b>Region 5 Lake Charles</b>	<b>Region 6 Alexandria</b>	<b>Region 7 Shreveport</b>	<b>Region 8 Monroe</b>
<b>Hospital</b>	18/35 51%	19/35 54%	8/8 100%	19/36 53%	11/17 65%	11/19 58%	14/25 56%	10/21 48%
<b>Psychiatric Hospital</b>	4/9 44%	3/11 27%	N/A	4/7 57%	4/6 67%	3/4 75%	2/6 33%	3/3 100%
<b>LTC/SNF*</b>	27/48 56%	21/50 42%	4/11 36%	19/42 45%	8/21 38%	12/28 43%	21/51 41%	22/36 61%
<b>Home Health</b>	25/52 48%	18/42 43%	3/10 30%	11/30 37%	8/15 53%	12/20 60%	15/21 71%	12/26 46%
<b>Hospice</b>	12/28 43%	18/26 69%	2/6 33%	8/15 53%	2/8 25%	6/12 50%	10/19 53%	10/17 59%
<b>Dialysis</b>	19/41 46%	13/28 46%	2/4 50%	10/19 53%	4/7 57%	4/7 57%	14/22 64%	10/14 71%
<b>Ambulatory Surgery</b>	9/21 43%	8/15 53%	5/6 83%	5/13 38%	3/6 50%	2/5 40%	6/9 67%	2/6 33%

\*LTC/SNF - Long Term Care/Skilled Nursing Facilities

N/A – There were no psychiatric hospitals located within this RLMA.

Note: Response rates by RLMAs were not given for case management, rural health clinics and FQHCs because of the overall low statewide response rates. Regional response rates were also not given for public health.

Licensed Beds as a Way of Determining Representativeness – Bias Analysis

Another way of describing the representativeness of the study results is to compare the number of licensed patient beds in responding and non-responding facilities. The information obtained from DHH’s lists of hospitals and skilled nursing facilities included number of beds in the majority of responding hospitals, psychiatric hospitals, long term care facilities and skilled nursing facilities. We found that the average number of beds in responding hospitals (110) was slightly larger than non-responding hospitals (86). Table 3 illustrates the differences in responding and non-responding hospitals based on bed size. When hospitals were categorized as small (less than 42 beds) and large (greater than 42 beds), we found that the large hospitals were slightly more likely to have responded to the survey than were small hospitals (Table 4). Forty-two beds represented the median number of beds for responding and non-responding hospitals. The hospitals surveyed had 19,613 licensed beds, and our responding hospitals had 12,078 beds or 62 percent of the total number of beds. This is larger than our overall response rate (46 percent), which is consistent with the finding that larger hospitals were more likely to respond to the survey.

**Table 3. Hospitals - Bed Size Among Responding and Non-responding Healthcare Facilities**

<b>Response Status</b>	<b>N</b>	<b>Mean Beds</b>	<b>Std. Dev.</b>	<b>Min.</b>	<b>Max.</b>
Responding Facilities	110	110	141.5	10	734
Non-responding Facilities	86	88	121.1	10	700

**Table 4. Hospitals - Response Rate by Facility Size**

<b>Facility Size</b>	<b>Total Hospitals in Category</b>	<b># Hospitals Responding</b>	<b>Response Rate in Category</b>
Small	98	49	50%
Large	98	61	62%

Note: Hospitals were classed as small if they had less than 42 beds (the median) and large if they had more than 42 beds.

The average number of beds in responding (124) and non-responding (128) long term care/skilled nursing facilities (LTC/SNF) were also similar (Table 5). The total number of beds for respondents and non-respondents in LTC/SNF was 36,107 with 16,547 beds (46 percent) accounted for by responding facilities which was similar to the overall response rate of 47 percent for LTC/SNF. Again these results suggest very little response bias owing to facility size.

**Table 5. Long Term Care/Skilled Nursing Facilities - Bed Size Among Responding and Non-responding Facilities**

<b>Response Status</b>	<b>N</b>	<b>Mean Beds</b>	<b>Std. Dev.</b>	<b>Min.</b>	<b>Max.</b>
Responding Facilities	134	124	42.6	9	205
Non-responding Facilities	153	128	46.7	12	297

The average number of beds in responding (52) and non-responding (108) psychiatric hospitals did show a notable difference. Non-respondents had twice the number of licensed beds when compared to responding psych hospitals (Table 6). When dealing with a small number of cases, each case will tend to have a significant impact on the mean. It is also important to note that the dispersion of beds across psychiatric hospitals is skewed. Most psychiatric hospitals are very small. In fact, half have fewer than 24 beds. Yet, there are a few large psychiatric hospitals with 300 or more (up to nearly 700) beds. Those extreme outliers influence the mean. But, at the same time, when the psychiatric hospitals are divided into small and large facilities based on the median number of beds (small < 42 beds, large > 42 beds), smaller hospitals tend to have a higher response rate than large hospitals (see Table 7).

**Table 6. Psychiatric Hospitals: Bed Size Among Responding and Non-responding Facilities**

<b>Response Status</b>	<b>N</b>	<b>Mean Beds</b>	<b>Std. Dev.</b>	<b>Median</b>	<b>Min.</b>	<b>Max.</b>
Responding Facilities	23	52	79.9	24	12	348
Non-responding Facilities	23	108	157.1	28	10	663

Note: The mean of bed size distribution across both groups is likely to be influenced by a few very large hospitals amongst a plurality of small hospitals.

**Table 7. Psychiatric Hospitals: Response Rate by Facility Size**

<b>Facility Size</b>	<b>Total # Psychiatric Hospitals in Category</b>	<b># Psychiatric Hospitals Responding</b>	<b>Response Rate</b>
Small	26	15	58%
Large	21	8	38%

Note: Psychiatric Hospitals were classed as small if they had less than 42 beds (the median) and large if they had more than 42 beds.

### Findings from the Nurse Employer Survey

Healthcare facilities that completed the Nurse Employer Survey provided information on 37,628 permanent, regularly scheduled nursing personnel across eight industry groups (Table 8). The Louisiana Workforce Commission's 2008-2018 employment estimates help to put these survey results into statewide perspective (LWC, 2011). Based on LWC's annually revised 2008-2018 long term employment estimates and estimated annual growth, there were 43,418 RNs, 20,932 LPNs, and 41,908 nurse aides, psychiatric and home health aides employed in Louisiana in 2010. Taking into consideration the non-responders (those healthcare facilities that were surveyed, but did not respond) and the health care industries that were not surveyed (i.e., physician's offices, anesthesiology groups), the current study collected information on approximately 45 percent of employed RNs, 32 percent of LPNs, and 26 percent of NAs in Louisiana. Therefore, the counts for vacancies, separations, and new jobs to be created through 2012 based on survey respondents will underestimate the totals for Louisiana substantially. Undercounts in the surveyed industries will be addressed using imputed data for vacancies, separations and growth. However, the portion of the nursing workforce working in non-surveyed industries cannot be addressed in this study.

**Table 8. Nursing Personnel Employed by Respondents in Eight Healthcare Industry Groups Excluding Temporary Agency Personnel (June 30, 2010)**

	Hospital	Psych Hospital	Long Term Care	Home Health	Hospice	Ambulatory Care Dialysis	Ambulatory Care Surgery	Public Health	Totals
<b>RNs</b>	<b>15,895</b>	<b>631</b>	<b>695</b>	<b>850</b>	<b>394</b>	<b>354</b>	<b>343</b>	<b>314</b>	<b>19,476</b>
NPs	237	14	12	4	4	7	7	23	308
CRNAs	239						59		298
CNSs	37	1	0	4	0	0	0	1	43
CNMs	2	0							2
<b>Total APRNs</b>	<b>515</b>	<b>15</b>	<b>12</b>	<b>8</b>	<b>4</b>	<b>7</b>	<b>66</b>	<b>24</b>	<b>651</b>
<b>LPNs</b>	<b>2916</b>	<b>205</b>	<b>2565</b>	<b>727</b>	<b>126</b>	<b>33</b>	<b>88</b>	<b>8</b>	<b>6,668</b>
<b>NAs</b>	<b>3252</b>	<b>817</b>	<b>5377</b>	<b>590</b>	<b>336</b>	<b>365</b>	<b>75</b>	<b>17</b>	<b>10,829</b>
<b>Total</b>	<b>22,578</b>	<b>1668</b>	<b>8649</b>	<b>2175</b>	<b>860</b>	<b>759</b>	<b>572</b>	<b>363</b>	<b>37,624</b>

Notes: Counts include permanent staff (full and part-time) but not temporary agency personnel. Healthcare facilities/agencies were asked to report Advanced Practice Registered Nurses (APRNs) separately from RNs. Throughout the document, NA is used to refer to unlicensed assistive personnel functioning as nurse aides, psychiatric aides, and home health aides.

#### Skill Mix and Staff Size

The skill mix of nurses employed varied by industry group (Table 9). Within hospitals, 70 percent of the nursing staff were RNs, 2 percent were APRNs, 13 percent LPNs, and 14 percent NAs. Nursing personnel employed by the public health department and ambulatory surgical care centers were also predominantly RNs, 87 percent and 63 percent, respectively. Approximately 45 to 46 percent of the nursing personnel in home health, hospice and dialysis were RNs. Nursing assistants represented 60 percent of the nursing personnel in long term care/skilled nursing facilities with LPNs coming in at 32 percent and RNs representing only 8 percent of the nursing skill mix. Nurse aides also represented over 48 percent of the nursing personnel in psychiatric hospitals and dialysis centers. APRNs represented 11 percent of the nursing personnel in ambulatory surgical care centers with certified registered nurse anesthetists (CRNAs) being the most predominant at 10 percent. The majority of nurse practitioners captured in this study were employed in public health (5 percent of nursing personnel were NPs) followed by dialysis centers, hospitals and psychiatric hospitals at 1 percent each.

**Table 9. Percentage (%) of Nursing Personnel Employed by Respondents in Eight Healthcare Industry Groups (June 30, 2010)**

	Hospital %	Psych Hospital %	Long Term Care %	Home Health %	Hospice %	Ambulatory Care Dialysis %	Ambulatory Care Surgery %	Public Health %
<b>RNs</b>	<b>70</b>	<b>37</b>	<b>8</b>	<b>45</b>	<b>46</b>	<b>46</b>	<b>63</b>	<b>87</b>
NPs	1	1	0.1	0.3	0.4	1	1	5
CRNAs	1						10	
CNSs	0.1	0.1	0.0	0.1	0	0	0	0.2
CNMs	0.0							0
<b>APRNs</b>	<b>2</b>	<b>1</b>	<b>0.1</b>	<b>1</b>	<b>0.4</b>	<b>1</b>	<b>11</b>	<b>6</b>
<b>LPNs</b>	<b>13</b>	<b>13</b>	<b>32</b>	<b>29</b>	<b>14</b>	<b>5</b>	<b>14</b>	<b>2</b>
<b>NAs</b>	<b>14</b>	<b>49</b>	<b>60</b>	<b>25</b>	<b>39</b>	<b>49</b>	<b>12</b>	<b>4</b>
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Notes: Percentages include both permanent staff (full and part-time) and temporary agency personnel. Healthcare facilities/agencies were asked to report APRNs separately from RNs. Throughout the document, NA is used to refer to unlicensed assistive personnel functioning as nurse aides. Total APRNs and not specific types of APRNs were included in the final analysis to determine the 100% skill/staff mix for each type of healthcare industry group.

*Skill Mix in Small and Large Hospitals*

In addition to varying skill mix, the eight health care industries also vary in staff size and in use of per diem staff and temporary agency personnel. Hospitals clearly have the largest nursing staff sizes.

Because of the wide range in the number of beds reported by the responding hospitals (minimum of 10 beds, maximum of 734 beds), skill mix was determined for both small hospitals and large hospitals. Small hospitals were defined as hospitals with less than 60 beds and large hospitals were identified as those hospitals with 60 or more beds (Louisiana Department of Health and Hospitals Department of Public Health - Health Report Card, 2009). Small hospitals (less than 60 beds) on average employed 37 RNs, 1 NP, 1 CRNA, 15 LPNs and 13 NAs. Small hospitals also tended to use more part-time employees than temporary staff (Table 10).

**Table 10. Average Nursing Personnel Staff Sizes by Industry and Personnel Type –Small Hospitals (n =60) (June 30, 2010)**

	RNs	NPs	CRNAs	LPNs	NAs	% Temporary Staff	% Part-time Employees
<b>Small Hospital Less than 60 Beds</b>	37	1	1	15	13	14%	19%

In contrast, large hospitals (hospitals with beds  $\geq$  60 beds) employed an average of 322 RNs, which is equivalent to almost eight times the number employed in small hospitals. Large hospitals also employed on average 4 NPs, 5 CRNAs, 49 LPNs, and 60 NAs (Table 11). There was very little difference in the percentage of temporary staff and part-time employees hired by large hospitals, 11

percent and 12 percent respectively. Small hospitals tended to rely more on temporary and part-time employees when compared with large hospitals.

**Table 11. Average Nursing Personnel Staff Sizes by Industry and Personnel Type – Large Hospitals (n=49) (June 30, 2010)**

	RNs	NPs	CRNAs	LPNs	NAs	% Temporary Staff	% Part-time Employees
<b>Large Hospital Greater than or Equal to 60 Beds</b>	322	4	5	49	60	11%	12%

Table 12 presents the average nursing staff sizes in each of the seven remaining healthcare industry groups. In psychiatric hospitals and long term care and skilled nursing facilities, NAs represent the largest component of the nursing staff. Although small in number, the vast majority of APRNs captured in this study, on average, are employed in hospitals, followed by ambulatory surgical care centers. Staff sizes for home health, hospice, dialysis centers, ambulatory surgical care centers and public health clinics are relatively small. Differences in staff size must be considered when interpreting staffing metrics based on percentages for health care industries having small staff sizes, since a single vacancy or turnover can drastically inflate those metrics when staff sizes are very small.

**Table 12. Average Nursing Personnel Staff Sizes by Healthcare Industry and Personnel – June 30, 2010**

	RNs	NPs	CRNAs	LPNs	NAs	% Temporary Staff	% Part-time Employees
<b>Psychiatric Hospitals</b>	34	1		12	45	21	17
<b>LTC/SNF</b>	6	.1		22	41	5	17
<b>Home Health</b>	13	.1		8	7	16	32
<b>Hospice</b>	6	.1		2	5	8	3
<b>Ambulatory Care - Dialysis</b>	5	.1		1	5	11	11
<b>Ambulatory Surgical Care</b>	11	.2	1	2	2	18	26
<b>Public Health</b>	5	.3		0.1	0.2	16	0

Note: Averages include both permanent staff (full and part-time) and temporary agency personnel. Because of the low numbers for Clinical Nurse Specialists and Certified Nurse Midwives, only NPs and CRNAs will be included in further analysis.



The business models of the industry groups surveyed vary in the percentage of temporary staff and part-time nursing employees (Tables 10-12). The percentage of part-time employees used by the health care industries ranged from no part-time employees in public health to almost one-third of all nursing personnel employed in home health (32 percent). Over one fourth of the persons employed by ambulatory surgical care were also part-time employees (26 percent). In contrast, 21 percent of persons employed by psychiatric hospitals were temporary staff, followed by 18 percent of the employees in ambulatory surgical care centers. Health care industries using large percentages of temporary, per diem, contract or agency nurses complicate efforts to measure current demand for additional nurses, since “vacancy” is not typically used to describe demand for additional temporary or agency nurses.

### Vacancies and Vacancy Rates

The healthcare industries included in the current study – respondents and non-respondents combined - had over 1,400 vacancies for RNs on 06/30/2010 (Table 13). Additionally, there were over 719 LPN vacancies and 1,695 NA vacancies. The majority of the RN vacancies (61 percent) were for direct care RNs in hospitals. Over 40 percent of the vacant LPN positions were in LTC/SNF facilities, followed closely by 36 percent in hospitals. Fifty percent of the NA vacancies were in LTC/SNF facilities and 31 percent were in hospitals. These figures reflect a substantial need for nursing personnel in Louisiana, despite the recession, and they are likely underestimates of the true number of nursing vacancies because not all nurse employers (i.e., physicians’ offices) were included in the study. Vacancies could only be estimated for NPs and CRNAs in hospitals because of the small number employed by the health care industries surveyed.

**Table 13. Estimated Vacant Positions as of June 30, 2010**

	RN Vacancies		NP Vacancies	CRNA Vacancies	LPN Vacancies	NA Vacancies
<b>Hospital</b>	Direct Care	922	26	9	257	527
	Indirect Care	100				
<b>Psychiatric Hospital</b>	Direct Care	33			19	102
	Indirect Care	4				
<b>Long Term Care/SNF</b>	Direct Care	43			289	853
	Indirect Care	40				
<b>Home Health</b>	Direct Care	175			87	90
	Indirect Care	64				
<b>Hospice</b>	Direct Care	55			37	63
	Indirect Care	9				
<b>Ambulatory Care – Dialysis</b>	Direct Care	23			7	51
	Indirect Care	0				
<b>Ambulatory Surgical Care</b>	Direct Care	24			23	9
	Indirect Care	7				
<b>*Public Health</b>	Direct Care	0			0	0
	Indirect Care	0				
<b>Total (all groups)</b>	<b>Direct Care</b>	<b>1,275</b>	<b>26</b>	<b>9</b>	<b>719</b>	<b>1,695</b>
	<b>Indirect Care</b>	<b>224</b>				

\*Vacant positions for nursing personnel within the public health department were eliminated due to a lack of funding.

Full-time equivalent (FTE) position vacancy rates were computed from the reported number of vacancies. Full-time equivalent vacancy rates are the standard metric used by workforce planners to understand the amount of nursing labor that is currently demanded by employers. Position vacancy rates represent the proportion of FTE positions, by industry group and personnel type, that were vacant as of June 30, 2010. The position vacancy rate removes the influence of individual facilities with very high vacancy rates because filled and vacant positions are summed across facilities before the rate is constructed (Table 14).

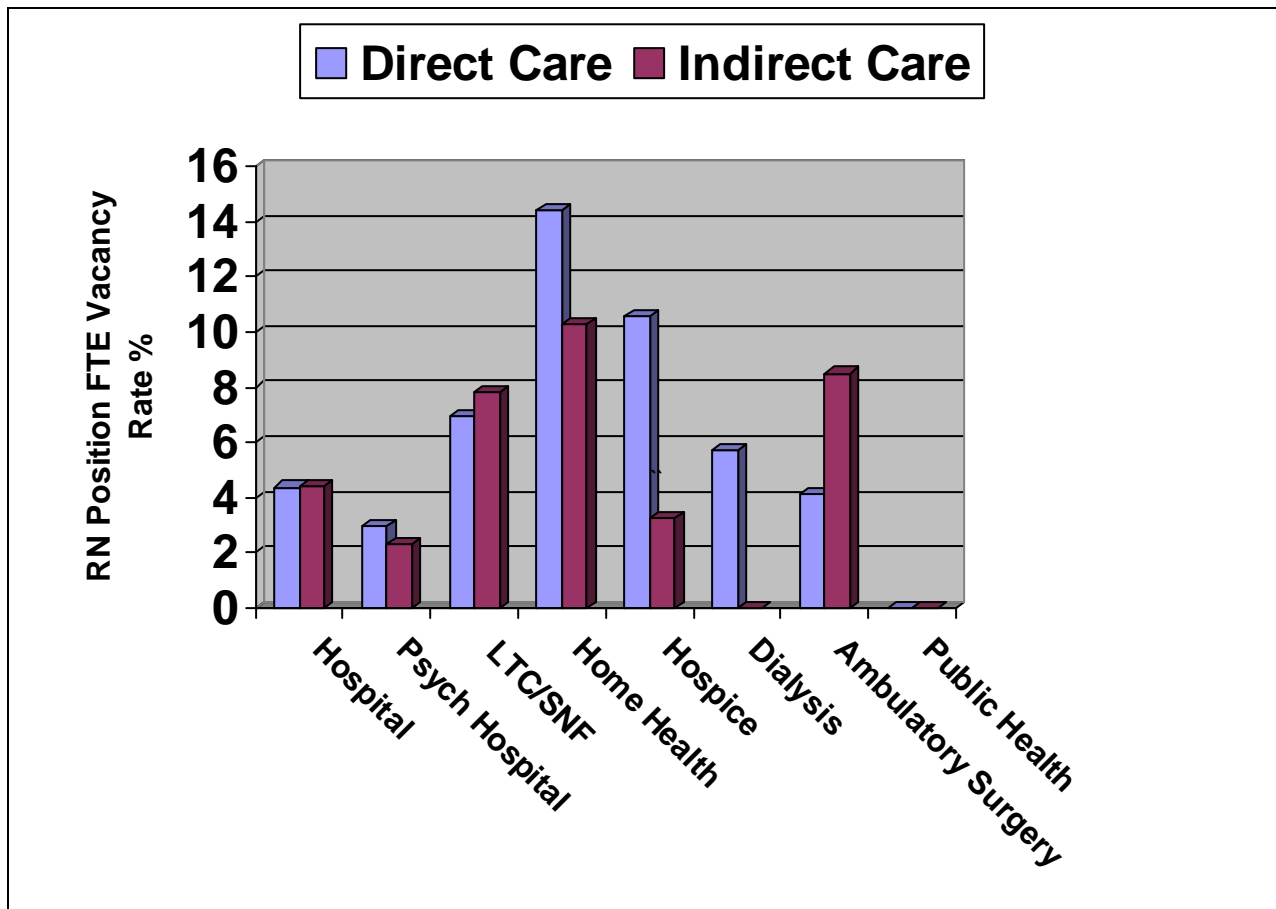
**Table 14. Full-Time Equivalent (FTE) Vacancy Rates by Healthcare Industry Type as of June 30, 2010**

	RN %	NPs %	CRNAs %	LPNs %	NAs %	
<b>Hospital</b>	Direct Care	4	5	2	6	10
	Indirect Care	4				
<b>Psychiatric Hospital</b>	Direct Care	3			6	7
	Indirect Care	2				
<b>Long Term Care/SNF</b>	Direct Care	7			7	8
	Indirect Care	8				
<b>Home Health</b>	Direct Care	14			9	10
	Indirect Care	10				
<b>Hospice</b>	Direct Care	11			19	12
	Indirect Care	3				
<b>Ambulatory Care – Dialysis</b>	Direct Care	6			12	9
	Indirect Care	0				
<b>Ambulatory Surgical Care</b>	Direct Care	4			16	9
	Indirect Care	9				
<b>*Public Health</b>	Direct Care	0			0	0
	Indirect Care	0				

Note: Vacancy rates for NPs and CRNAs could not be computed for health care industries other than hospitals due to numbers that were too small to analyze.

\*Vacant positions for nursing personnel within the public health department were eliminated due to a lack of funding.

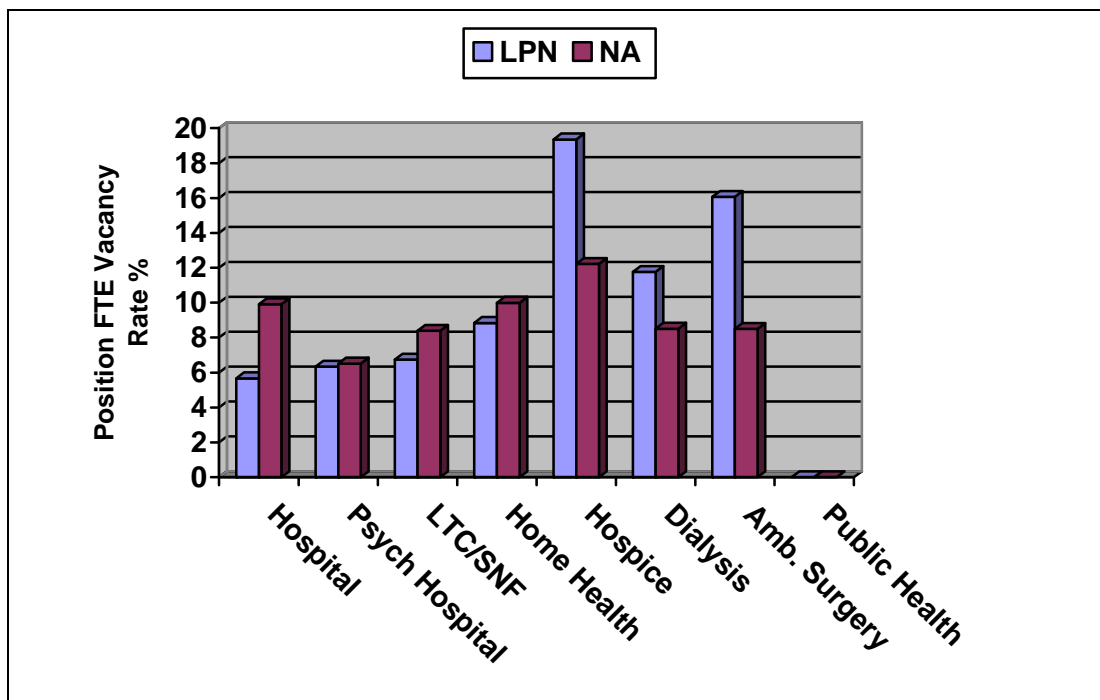
RN FTE vacancy rates for each industry are presented in Figure 1. RN vacancy rates were presented in terms of direct care RNs (RNs spending 74-100 percent of their scheduled workday providing care to patients) and indirect Care RNs (RNs spending 25 percent or less of their scheduled work time providing direct care to patients and 75 percent or more of their time performing administrative or supervisory duties). The highest vacancy rate for direct care RNs was 14 percent for home health and 11 percent for hospice, followed by a 7 percent vacancy rate for LTC/SNF. The lowest vacancy rate for direct care and indirect care RNs was reported by Psychiatric Hospitals.



**Figure 1. RN Direct Care and Indirect Care Full-Time Equivalent Vacancy Rates by Industry as of June 30, 2010**

The health care industries with the greatest need for indirect care RNs were Home Health (10 percent), Ambulatory Surgical Care – ASC (9 percent) and LTC/SNF (8 percent). Ambulatory Surgical Care and LTC/SNF reported a greater need for indirect care when compared to direct care RNs.

LPN and NA FTE vacancy rates are presented in Figure 2. The highest LPN vacancy rates are for Hospice (19 percent), Ambulatory Surgical Care (16 percent), and Dialysis (12 percent). Health care industries having the highest vacancy rate for NAs were Hospice (12 percent), Home Health (10 percent), and Hospitals (10 percent). Notably, Hospice had the highest vacancy rates for both LPNs and NAs. Hospitals had the lowest vacancy rate for LPNs and Psychiatric Hospitals had the lowest vacancy rate for NAs.



**Figure 2. LPN and NA Full-Time Equivalent Vacancy Rates by Industry as of June 30, 2010**

Unmet Need for Nursing Personnel

The vacancy rates reported by the respondents may underestimate the need for nursing personnel. Budgeted positions reflect *demand* for nurses: the number of nurses businesses are willing to employ given the wages they must pay those nurses. In many cases, businesses are unable to afford the number of budgeted positions they would consider ideal for the provision of safe patient care. We asked respondents whether actual need was greater, equal, or less than the number of budgeted positions they held. In Table 15 you can see that many respondents reported an unmet need for budgeted positions. Approximately one third of responding LTC/SNF and Dialysis centers reported an unmet need for direct care RNs, followed by one fourth of responding Home Health agencies. Unmet need for NAs was reported by 39 percent of psychiatric hospitals, 39 percent of LTC/SNFs, and 32 percent of dialysis centers.

The greatest unmet need for NPs was reported by Hospice (17 percent), Home Health (14 percent) and LTC/SNF (14 percent). Approximately 5 percent of Ambulatory Surgical Centers reported an unmet need for CRNAs in contrast to responding hospitals which did not report an unmet need for CRNAs. Many CRNAs in Louisiana are employed by Anesthesiology Groups and contract their services with local hospitals (i.e., Anesthesiology Group Associates).

When the 2010 Nurse Employer Survey was conducted the nursing division of Louisiana’s Public Health Department was undergoing tremendous cuts, as well as layoffs of nursing personnel. Therefore, while the vacancy rate for RNs, which is based on the industries willingness to employ RNs, was ‘0’ for the Public Health industry, these rates are not keeping pace with perceived need for personnel. In fact the public health industry reported an unmet need for direct care and indirect care RNs, NPs, and NAs. According to the Chief Public Health Nurse for Louisiana, the minimum

recommended standards for Public Health Nursing requires that nurses employed by the public health department possess a minimum of a baccalaureate degree in nursing. The Louisiana Public Health department has not hired a LPN since 2006.

**Table 15. Percentage of Respondents Reporting Unmet Need for Budgeted Positions (% of Healthcare Industries Reporting Greater Need Than Budgeted FTEs Available) June 30, 2010**

		<b>RNs %</b>	<b>NPs %</b>	<b>CRNAs %</b>	<b>LPNs %</b>	<b>NAs %</b>
<b>Hospital</b>	Direct Care	19	8	0	15	18
	Indirect Care	10				
<b>Psychiatric Hospital</b>	Direct Care	17	0		30	39
	Indirect Care	13				
<b>Long Term Care/SNF</b>	Direct Care	31	14		30	39
	Indirect Care	22				
<b>Home Health</b>	Direct Care	26	14		9	12
	Indirect Care	20				
<b>Hospice</b>	Direct Care	19	17		21	13
	Indirect Care	14				
<b>Ambulatory Care - Dialysis</b>	Direct Care	32	8		14	32
	Indirect Care	18				
<b>Ambulatory Surgical Care</b>	Direct Care	17	8	5	9	4
	Indirect Care	15				

Note: One survey was completed for the 72 public health units/clinics in Louisiana which indicated that 100% of the health units had an unmet need for RNs (direct care and indirect care), NPs and NAs.

### Replacement Growth, Separations and Turnover Rates

The Louisiana Workforce Commission produces employment projections each year including the number of openings that can be expected due to job growth and replacement growth (LWC, 2011). Annual replacement is defined as the number of workers who leave their jobs to enter other occupations, retire, or leave the workforce for other reasons. This number is very important in terms of training new members of the workforce. In estimates revised in 2011, LWC estimated that 662 job openings for RNs, 531 job openings for LPNs, and 350 job openings for NAs would occur each year in Louisiana (between 2008 and 2018) due to annual replacements. In the current study, employers were asked to report the number of separations that occurred between July 1, 2009 and June 30, 2010. Separations are defined as the number of nursing personnel, full and part-time, that were employed by a health care facility within a specified time frame and left the facility either voluntarily or involuntarily. Separations do not include nursing personnel that moved from one position to another within a facility or persons hired but never reporting for work. The number of separations is very important when addressing the economic impact of high turnover rates within health care facilities. Respondents alone reported over 2,600 RN separations, 1,400 LPN separations, and 4,300 NA separations in one year – these numbers exclude non-respondents, as well as industries that were not surveyed (Table 16).

**Table 16. Separations Reported by Respondents, 07/01/2009-06/30/2010**

	RNs	LPNs	NAs	Total # (all personnel)
Hospital	1893	509	923	3325
Psychiatric Hospital	110	40	195	345
Long Term Care/SNF	144	690	2823	3657
Home Health	266	183	154	603
Hospice	102	34	101	237
Ambulatory Care – Dialysis	56	6	100	162
Ambulatory Surgical Care	28	10	5	43
Public Health	35	1	2	38
<b>Total (all groups)</b>	<b>2634</b>	<b>1473</b>	<b>4303</b>	<b>8410</b>

When data was imputed for non-respondents, the estimated separations reported for RNs and LPNs more than doubled and the number of separations for NAs was two and one half times that reported by respondents (Table 17). Between July 1, 2009 and June 30, 2010 (or the most current report year), there were an estimated 5,824 RN separations, 3,746 LPN separations and 12,001 separations. The majority of the separations for RNs were within hospitals, whereas the majority of the separations for LPNs and NAs were in LTC/SNF. These findings are consistent with findings from other statewide nurse employer surveys (FCN, 2010).

**Table 17. Estimated Separations - Respondents and Non-respondents, 07/01/2009-06/30/2010**

	RNs	LPNs	NAs	Total # (all personnel)
Hospital	4007	1163	2117	7,287
Psychiatric Hospital	316	108	571	995
Long Term Care/SNF	370	1855	8402	10,627
Home Health	676	496	405	1,577
Hospice	237	82	244	563
Ambulatory Care – Dialysis	118	15	245	378
Ambulatory Surgical Care	65	26	15	106
Public Health	35	1	2	38
<b>Total (all groups)</b>	<b>5,824</b>	<b>3,746</b>	<b>12,001</b>	<b>21,571</b>

*Turnover Rates* - Table 18 presents turnover rates by industry group and personnel type. Turnover rates were based on the number of nursing personnel (RNs, LPNs, NAs) leaving a healthcare facility between July 1, 2009 and June 30, 2010 divided by the total number of nursing personnel employed during that period expressed as a percentage. Average turnover rates can be heavily skewed by facilities with very high (or very low) turnover rates. For this reason, both average and median

facility rates are presented in Table 18. The median turnover rate describes a rate at which half of the facilities fall below the rate and half fall above the rate, which removes the influence of outliers.

**Table 18. Turnover Rates Reported by Respondents, by Industry Group and Personnel Type (July 1, 2009 – June 30, 2010)**

	RNs		LPNs		NAs	
	Average	Median	Average	Median	Average	Median
Hospital	23	17	27	21	63	30
Psychiatric Hospital	36	23	40	24	38	34
LongTerm Care/SNF	36	22	40	32	68	58
Home Health	35	22	44	19	47	14
Hospice	45	29	44	13	48	33
Ambulatory Care Dialysis	26	5	73	0	47	37
Ambulatory Surgical Care	12	0	12	0	13	0
Public Health	11		12		11	

Note: A zero percent median indicates that at least half of facilities had a zero percent turnover rate. The much higher average rates indicate the presence of outliers that skew the average higher.

Among hospital RNs in direct care – the largest personnel category included in our survey in terms of budgeted positions reported – median turnover was 17 percent over the course of one year. In 2010 the national turnover rate for RNs in hospitals was reported to be 14.6 percent (NSI National Healthcare and RN Retention Report, 2011). The median turnover rate for RNs was 29 percent in Hospices, 23 percent in psychiatric hospitals and 22 percent in LTC/SNFs and Home Health. At least half of the ambulatory surgical care centers had a zero percent turnover rate indicating that the median turnover rate is zero. There is no distribution for public health because one survey was completed for all public health units resulting in one set of numbers used to determine the turnover rate. LTC/SNFs had the highest median turnover rate for LPNs (32 percent) and NAs (58 percent).

These findings illustrate the importance of nurse retention efforts. Turnover costs – which includes replacement, training, the cost of advertising, recruiting, and hiring for a position as well as orienting a new employee and productive capacity lost during the process – can be as high as a year’s salary for RNs (FCN, 2010; Jones and Gates, 2007). Beyond the financial costs of turnover, high rates of staffing instability cause heavier workloads and increased dissatisfaction among existing personnel. They may also compromise the continuity and quality of care received by patients (FCN, 2010; Jones and Gates, 2007).

Projected Two-Year Growth in Budgeted Positions (2010-2012)

Employers were asked to estimate the total number of new positions they intended to create over the next two years (2010 and 2012). Approximately 66 percent of the survey respondents answered this question. Some of the health care facilities may not have answered the question because of the difficulty associated with estimating future hiring needs given the current state of the economy. The actual numbers reported by responding healthcare industries can be seen in Table 19. The number of openings due to job growth reported by respondents alone was 1,112 RNs, 488 LPNs, and 698 NAs over the next two years. These numbers do not include non-responding health care facilities.

**Table 19. Growth Reported by Respondents for Nursing Personnel (2010-2012)**

	New RN Positions #		New NP Positions #	New CRNA Positions #	New LPN Positions #	New NA Positions #	Total # (All nursing personnel)
Hospital	Direct Care	402	24	1	143	132	757
	Indirect Care	55					
Psychiatric Hospital	Direct Care	40			28	72	148
	Indirect Care	9					
Long Term Care/SNF	Direct Care	59			146	251	474
	Indirect Care	8					
Home Health	Direct Care	219			109	82	469
	Indirect Care	59					
Hospice	Direct Care	123			48	121	313
	Indirect Care	1					
Ambulatory Care – Dialysis	Direct Care	30			7	35	73
	Indirect Care	1					
Ambulatory Surgical Care	Direct Care	39			7	5	57
	Indirect Care	6					
Public Health	Direct Care	20			0	0	31
	Indirect Care	11					
<b>Total (all groups)</b>	<b>Direct Care</b>	<b>932</b>	<b>24</b>	<b>1</b>	<b>488</b>	<b>698</b>	<b>2,322</b>
	<b>Indirect Care</b>	<b>180</b>					

Note: Numbers reported for NPs and CRNAs should be viewed with caution due to the type of industries participating in the current project, which does not include physician’s offices. Also, hospitals reported that many of their CRNAs were not considered employees, but were on contract with the hospital through anesthesiology groups.

Table 20 shows the expected growth in nursing jobs through 2012 when data is imputed for non-respondents. If non-responders expect similar growth as their responding counterparts, over 2,500 new RN jobs, 1,100 new LPN jobs, and more than 1,700 new NA jobs will be generated over the next two years which is equivalent to an annual growth of 1,250 RN positions, 550 LPN positions, and 850 NA positions for the eight industry groups included in our study. These figures, although similar to LWC’s predictions for annual growth (1,002 RNs; 200 LPNs; 1,034 NAs), are underestimating



total growth because of the health care industries that were not included in the survey (i.e., physician's offices).

**Table 20. Two-year Estimated Growth in Positions (2010-2012)**

	New RN Positions		New NP Positions	New CRNA Positions	New LPN Positions	New NA Positions
Hospital	Direct Care	844	52		316	301
	Indirect Care	128				
Psychiatric Hospital	Direct Care	101			68	176
	Indirect Care	23				
Long Term Care/SNF	Direct Care	134			342	587
	Indirect Care	43				
Home Health	Direct Care	529			304	266
	Indirect Care	166				
Hospice	Direct Care	331			128	354
	Indirect Care	81				
Ambulatory Care - Dialysis	Direct Care	64			19	81
	Indirect Care	1				
Ambulatory Surgical Care	Direct Care	98			23	15
	Indirect Care	17				
Public Health	Direct Care	30			0	0
	Indirect Care	11				
<b>Total (All Groups)</b>	<b>Direct Care</b>	<b>2,131</b>	<b>52</b>		<b>1200</b>	<b>1780</b>
	<b>Indirect Care</b>	<b>470</b>				

Note: Growth in positions was not estimated for CRNAs because of the small numbers reported by the healthcare industries surveyed.

The healthcare industry group with the greatest overall growth rate for all types of nursing personnel was Hospice, showing a growth rate of 51 percent for LPNs, 48 percent for direct care RNs, and 44 percent for indirect care RNs over the next two years (Table 21). It is also interesting to note the need for more direct care RNs by home health care and hospice. The Public Health Department is transitioning away from direct services to Population-Based Care which will increase the need for more indirect care RNs in the next two years (Chief Public Health Nurse - Direct Communication, December 2, 2011). Created positions reported by respondents reflect the healthcare facility's desire to expand, but may not reflect the reality of the facility's ability to expand in an era of budget constraints. Expectations may be revised based upon current economic pressures or if the current wages for nursing personnel increase considerably.

**Table 21. Two-year Estimated Industry Growth Rates (%) for Nursing Personnel (2010-2012)**

		<b>New RN Positions %</b>	<b>New NP Positions %</b>	<b>New CRNA Positions %</b>	<b>New LPN Positions %</b>	<b>New NA Positions %</b>
Hospital	Direct Care	4	17		8	5
	Indirect Care	6				
Psychiatric Hospital	Direct Care	8			16	10
	Indirect Care	8				
Long-Term Care/SNF	Direct Care	14			6	5
	Indirect Care	8				
Home Health	Direct Care	28			17	19
	Indirect Care	22				
Hospice	Direct Care	48			51	52
	Indirect Care	44				
Ambulatory Care – Dialysis	Direct Care	12			23	12
	Indirect Care	2				
Ambulatory Surgical Care	Direct Care	15			11	9
	Indirect Care	18				
Public Health	Direct Care	7	0		0	0
	Indirect Care	100				

Note: Shaded areas represent healthcare industries with numbers too small to calculate growth rate.

#### Clinical or Administrative Specialties in High Demand

We asked employers about their experience in recruiting and filling positions in a number of clinical and administrative specialty positions. We also asked about employers' future demand for personnel with these specialties. Because the eight industry groups we included employ nurses with different specialties, surveys were tailored to each industry.

The top five most difficult nursing positions to fill in each health care industry group can be found in Table 22. The rankings are based on the average number of weeks it took to fill positions in each industry group. Interestingly, Administrators/Supervisors represented one of the top five most difficult positions to fill in each of the eight industry groups. Direct care staff RN positions were also ranked as one of the top five most difficult positions to fill by Psychiatric Hospitals, LTC/SNF, Home Health, Hospice, Dialysis and Public Health. In contrast, direct care staff RNs were not identified as one of the top most difficult positions to fill in hospitals and ambulatory surgical care centers. Nurse practitioners were identified by hospitals, psychiatric hospitals, home health and public health as difficult positions to fill.

**Table 22. Top Five Most Difficult Nursing Positions to Fill, by Industry (July 1, 2009-June 30, 2010)**

	Hospital	Psych Hospital	Long Term Care	Home Health	Hospice	Ambulatory Care Dialysis	Ambulatory Surgery Care
<b>1</b>	Nurse Administrator	Psych Nurse Practitioner	Nurse Administrator	Case Manager/ Discharge Planner	Direct Care Staff RN	Licensed Practical Nurse	Nurse Administrator
<b>2</b>	Nurse Practitioner	Clinical Nurse Specialist	Minimum Data Set Nurse	Nurse Administrator	Patient Care Manager/ Coordinator	Direct Care Staff RN	Nurse Researcher
<b>3</b>	Nurse Manager	Unit Level Nurse Managers	Direct Care Staff RN	Nurse Practitioner	In-Service Educator	Nurse Tech	Quality and Infection Control Nurse
<b>4</b>	Nurse Researcher/ Informatics	Nurse Administrator	Case Managers/ Discharge Planner	Quality and Infection Control Nurse	Quality Control Nurse	Nurse Administrator	Licensed Practical Nurse
<b>5</b>	Case Managers	Direct Care Staff RN	Quality and Infection Control Nurse	Direct Care Staff RN	Nurse Administrator	Unit Level Nurse Manager	Nurse Tech

Note: Rankings are based on reports of the average number of weeks it took to fill open positions for nursing personnel.

While Administrators/Supervisors represent the most difficult nursing position to fill for the majority of the responding health care industries, direct care staff RNs represent the nursing position with the most expected growth over the next two years for all of the health care industries surveyed (Table 23). LPNs and NAs are also reported as having the most expected growth rate in all of the responding health care industries excluding Home Health. Hospitals, Psychiatric Hospitals, Hospice and Public Health reported Nurse Practitioners as one of the top five nursing positions with the most expected growth over the next two years. Public Health also identified the clinic staff RN and care coordinator/case management nurse as positions that will have the most growth over the next two years. Because they offer more specialized care, hospitals were given a longer list of staff nursing positions. Many hospitals expected growth in the following specialty areas: Adult Critical Care, Emergency Room, Med-Surg, Ambulatory Care Clinics and Operating Room.

**Table 23. Top Five Growth Nursing Personnel Positions Over the Next Two Years (2010-2012)**

	Hospital	Psych Hospital	Long Term Care	Home Health	Hospice	Ambulatory Care Dialysis	Ambulatory Care Surgery
1	Direct Care Staff RN	Licensed Practical Nurse	Nurse Aides	Direct Care Staff RN	Nurse Aide	Direct Care Staff RN	Direct Care Staff RN
2	Nurse Aide	Psych Nurse Practitioner	Licensed Practical Nurses	Licensed Practical Nurse	Direct Care Staff RN	Nurse Aide	Nurse Aide
3	Licensed Practical Nurse	Psych Aide	Direct Care Staff RN	Case Manager/ Discharge Planner	Licensed Practical Nurse	Nurse Tech	Licensed Practical Nurse
4	Nurse Practitioner	Direct Care Staff RN	Minimum Data Set Nurses	Home Health Nurse Aide	Nurse Practitioner	Licensed Practical Nurse	Quality and Infection Control Nurse
5	Case Manager	Case Manager/Discharge Planner	Rehabilitation Nurses	Infusion Specialist	Patient Care Manager/ Coordinator	In-service Educator	Nurse Tech

Note: Rankings are based on the percentage of respondents reporting that they would need to hire more nursing personnel for specific types of positions.

Educational Preparation of RNs Employed

The majority of the RNs employed in Hospitals, Psychiatric Hospitals, LTC/SNF, Home Health, Hospice, and Dialysis were prepared at the associate and baccalaureate level, with associate degree nurses being the majority in every group but Hospitals (Table 24). The opposite was true for RNs in Ambulatory Surgery and Public Health with the majority of employed nurses holding the baccalaureate degree, followed by the Associate Degree. Twenty eight percent of the nurses employed in Ambulatory Surgery were diploma nurses, followed by 21 percent in Hospices. Approximately 11 percent of nurses employed in Ambulatory Surgery and Public Health were Masters prepared. Public Health reported that one percent of their RNs had a doctorate.

**Table 24. Educational Preparation of RNs in Louisiana according to Health Care Industry Group 2009-2010**

	Hospital	Psych Hospital	Long Term Care	Home Health	Hospice	Ambulatory Care Dialysis	Ambulatory Surgery	Public Health
	%	%	%	%	%	%	%	%
<b>Diploma</b>	5	3	13	13	21	13	28	9
<b>AD</b>	50	53	52	53	52	50	34	33
<b>BSN</b>	39	30	40	44	43	44	52	46
<b>Masters</b>	4	6	5	4	7	2	11	11
<b>Doctorate</b>	0	0	0	0	0	0	0	1

Hiring of New RN and LPN Graduates

Nursing employers were asked to share with us the number of new RN and LPN graduates that they hired in the last year (Table 25). As anticipated, responding hospitals hired the largest number of new RN graduates (820) and LTC/SNF hired the largest number of LPN graduates, followed by hospitals (189). Home Health, Hospice and Public Health reported that they do not hire new graduates do to the autonomy and independence that is needed in caring for clients in the community

setting and in their homes. It is interesting to note that one hospital reported that they hired 14 fewer new RN graduates in 2010 when compared to 2009, while in contrast, another hospital indicated that in an effort to contain cost their focus was on hiring new grads. Some of the LTC/SNFs that have never hired new graduates indicated that they did so in the last year for the first time. Employers of LPNs indicated that they are now requiring 6 months experience before hiring new graduates. One LTC/SNF reported that the hiring of new LPN graduates has increased because of the high turnover rate, high acuity of patients, and burn out.

The majority of the dialysis centers indicated that there is no change in the number of new RN graduates that were hired in the last year, yet some reported that they do not normally hire new graduates. The same was true for LPN graduates. Some of the Ambulatory Surgical Centers indicated that they do not hire new RN or LPN graduates. One employer stated that they did hire two new LPN graduates for PRN scrub positions.

**Table 25. New RN and LPN Graduates Hired in the Last year by Responding Health Care Industries (2009-2010)**

<b>Health Care Industry</b>	<b>RNs</b>	<b>LPNs</b>
Hospitals	820	189
Psychiatric Hospitals	21	11
Long Term Care/SNF	59	386
*Home Health	N/A	N/A
*Hospice	N/A	N/A
Ambulatory Care - Dialysis	22	5
Ambulatory Surgical Care	6	13
*Public Health	N/A	N/A
<b>Total (all groups)</b>	<b>928</b>	<b>604</b>

\*N/A – Do not hire New Graduates

## Major Findings

According to the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services, the nation has an estimated 3.06 million licensed registered nurses—more than ever before (HRSA, 2008). The nursing workforce is expected to grow quickly over the next several years, responding to increased demand from the aging Baby Boomer population and an increase in the number of people with access to health care. The 2010 Nurse Employer Survey has provided much needed data on the demand for nurses among Louisiana employers. The LWC 2008-2018 projections, which are based on employment in Louisiana and not residency, indicated that in 2010 there would be approximately 43,418 RNs, 20,932 LPNs, and 41,908 CNAs employed in Louisiana. Based on these estimations, we were able to capture information on 45 percent of the RNs, 32 percent of the LPNs, and 26 percent of the NAs employed in Louisiana.

- First of all the overall response rate of 46 percent for the Nurse Employer Survey is foundational for establishing representativeness of Louisiana's nursing workforce when discussing findings related to the study. The average response rate from organizations reported by Baruch and Holtom (2008) was found to be 35.7 percent. The response rate for the current study exceeds the average response rate reported by Baruch and Holton.
- The Bureau of Labor Statistics (2010-2011) predicts that the number of nursing jobs will grow from 2.62 million in 2008 to 3.20 million in 2018—a 22 percent increase. At the same time, 458,000 nurses will leave the profession, bringing the total number of available nursing jobs—including both newly created jobs and jobs left vacant by nurses who leave the profession—to 1.04 million. The number of estimated vacant positions for respondents and non-respondents on June 30, 2010 was 1,275 direct care RNs, 224 indirect care RNs, 719 LPNs, and 1,695 LPNs. Keeping in mind that these numbers are reflective of health care industries surveyed in the current study, it is evident that in spite of the recession, there continues to be a substantial need for nursing personnel in Louisiana.
- Vacancies and vacancy rates may often underestimate the need for nursing personnel in terms of the ideal staffing mix that is necessary for the provision of safe patient care. Many of the healthcare industries surveyed reported an unmet need in terms of the number of budgeted nursing positions that were currently allocated. For example, thirty-nine percent of psychiatric hospitals and LTC/SNFs reported an unmet need for NAs.
- There were over 21,000 separations estimated for nursing personnel between July 1, 2009 and June 30, 2010. RNs accounted for 5,824 of the separations, LPNs 3,746, and NAs 12,001. RNs accounted for over 50 percent of the total number of separations in hospitals while over 80 percent of the separations in long term care were for NAs.
- High turnover rates for nursing personnel can prove to be extremely costly and tend to have a negative impact on patient care and safety. The highest median turnover rate reported for RNs was in hospices, whereas the highest median turnover rate for NAs and LPNs was in LTC/SNFs.

- The estimated two year growth in nursing positions for RNs and NAs exceeded that of LWC's long term projections, although there was only a slight difference in the estimated growth for LPNs. The healthcare industry with the greatest estimated growth rate for all nursing personnel was hospice.
- Administrators/supervisors were identified as one of the top five most difficult positions to fill for all reporting healthcare agencies. The direct care staff RN was also identified as one of the top five most difficult positions to fill for all of the healthcare industries surveyed except hospitals and ambulatory surgery care centers. In contrast, direct care staff RNs were reported as having the greatest expected growth over the next two years.
- Hospitals hired the largest number of new RN graduates between June 30, 2009 and July 1, 2010 when compared to the other surveyed healthcare industries, and LTC/SNFs hired the largest number of new LPN graduates. It is interesting to note that LTC/SNF also hired 59 new RN graduates between June 30, 2009 and July 1, 2010.
- The educational preparation for the majority of the RN workforce for the reporting health care industries was the associate or baccalaureate degree. Overall, the number of RNs with an associate degree was slightly greater than the number with a baccalaureate degree except for ambulatory surgical care and public health.

### Recommendations

Recommendation #1: the Center should conduct further analysis of the 2010 employer survey data and continue to replicate the study biennially. The very rich employer survey data we collected must be more fully analyzed in order to provide a clearer picture of the demand for nurse employment. Future reports will focus on the following areas:

- Industry-specific Reports – The data will be used to create eight industry-specific reports detailing current nursing workforce demand which will give employers within the various healthcare industries the ability to make comparisons within and between healthcare industries at the state and national level.
- Quantifications of Open-Ended Items – Respondents provided rich textual data in response to our open-ended questions about how the current economic recession has affected their nurse staffing and hiring practices and which specialized skills are most needed. The narrative data will be quantified by coding responses into themes so that the most relevant information for each industry can be identified.
- Long-range Forecasting – The data from this study will be used to inform long-range forecasts of nurse demand and nursing shortage in Louisiana.

Recommendation #2 Replicate the employer survey every two years to allow the Center to track trends related to vacancy rates, turnover rates, and expected growth rates for nursing personnel at the state level and to also fine-tune long range forecasts using the most current demand data available. Because of the time and manpower needed to conduct the demand study, it may be wise to alternate healthcare industries every two years.

Recommendation #3: In subsequent demand studies, separate surveys will be completed for each public health unit to establish variability and allow for the conduction of statistical analysis that would produce a more comprehensive picture of the nursing workforce within the public health department.

Recommendation #4: Seek funding to conduct a demand study which focuses on APRNs. A major limitation of the current study was that primary employers of APRNs, specifically physician, were not surveyed because of the time and effort it would have taken to survey such a vast population. Accurate information about the demand for APRNs is extremely important at this time when there is going to be such an extreme need for primary care providers by 2014 as a result of the Affordable Care Act.

Recommendation #5: Conduct further studies on the economic impact of nursing personnel turnover within the healthcare industries identified in the current study. Share findings from these studies with key leaders in the various healthcare industries to facilitate changes in current practices related to those factors that contribute to high turnover rates among various nursing personnel.

Recommendation #6: Use the findings from the Nursing Workforce Demand Study to begin dialogue with employers experiencing large numbers of separations among their nursing personnel to identify best practices that would be adaptable to meeting the needs of both Louisiana's employers and nursing workforce.



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## Appendix A

### Regional Labor Market Areas in Louisiana



#### Louisiana's eight RLMA regions include:

**Region 1:** Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. John the Baptist and St. Tammany Parishes

**Region 2:** Ascension, East Baton Rouge, East Feliciana, Iberville, Livingston, Pointe Coupee, St. Helena, Tangipahoa, Washington, West Baton Rouge and West Feliciana Parishes

**Region 3:** Assumption, Lafourche and Terrebonne Parishes

**Region 4:** Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, St. Mary and Vermilion Parishes

**Region 5:** Allen, Beauregard, Calcasieu, Cameron and Jefferson Davis Parishes

**Region 6:** Avoyelles, Catahoula, Concordia, Grant, LaSalle, Rapides, Vernon and Winn Parishes

**Region 7:** Bienville, Bossier, Caddo, Claiborne, DeSoto, Lincoln, Natchitoches, Red River, Sabine and Webster Parishes

**Region 8:** Caldwell, East Carroll, Franklin, Jackson, Madison, Morehouse, Quachita, Richland, Tensas, Union and West Carroll Parishes

Source: The Louisiana Workforce Commission  
[http://www.laworks.net/LaborMarketInfo/LMI\\_OccAllProj\\_Revised.asp?years=20082018](http://www.laworks.net/LaborMarketInfo/LMI_OccAllProj_Revised.asp?years=20082018)