NCSBN
National Council of State Boards of Nursing

NCSBN RESEARCH BRIEF
Volume 43 | March 2010

2009 LPN/VN Nursing Knowledge Survey

Report of Findings from the

2009 LPN/VN Nursing Knowledge Survey

National Council of State Boards of Nursing, Inc. (NCSBN®)

Mission Statement

The National Council of State Boards of Nursing, composed of member boards, provides leadership to advance regulatory excellence for public protection.

Copyright ©2010 National Council of State Boards of Nursing, Inc. (NCSBN®)

All rights reserved. NCSBN®, NCLEX®, NCLEX-RN®, NCLEX-PN®, Nur*sys*® and TERCAP® are registered trademarks of NCSBN and this document may not be used, reproduced or disseminated to any third party without written permission from NCSBN.

Permission is granted to boards of nursing to use or reproduce all or parts of this document for licensure related purposes only. Nonprofit education programs have permission to use or reproduce all or parts of this document for educational purposes only. Use or reproduction of this document for commercial or for-profit use is strictly prohibited. Any authorized reproduction of this document shall display the notice: "Copyright by the National Council of State Boards of Nursing, Inc. All rights reserved." Or, if a portion of the document is reproduced or incorporated in other materials, such written materials shall include the following credit: "Portions copyrighted by the National Council of State Boards of Nursing, Inc. All rights reserved."

Address inquiries in writing to NCSBN Permissions, 111 E. Wacker Drive, Suite 2900, Chicago, IL 60601-4277. Suggested Citation: National Council of State Boards of Nursing. (2010). *Report of Findings from the 2009 LPN/VN Nursing Knowledge Survey*. Chicago: Author.

Printed in the United States of America

ISBN# 978-0-9822456-9-9

TABLE OF CONTENTS

Acknowledgments vii
Executive Summary 1
I. Background of Study 11
II. Methodology 12
Methodology Reviewers 12
Panel of SMEs 12
Survey Development 12
Survey Process 13
Sample Selection 13
Representativeness 13
Mailing Procedure 15
Confidentiality 15
Return Rates 15
Knowledge Survey Nonresponder Study 16
Summary 16
III. Demographics, Experiences and Practice Environments of Participants 17
Demographics/Past Experiences 17
Nursing Licenses Held 17
Gender 17
Survey Adequacy 17
Age 17
Race/Ethnic Background 17
Education Background 18
Primary Language 18
Years of Experience 18
Facilities 19
Client Health Conditions 19
Client Ages 21
Employment Setting/Specialty 21
Summary 22
IV. Knowledge Statement and Laboratory Value Findings 23
Overview of Methods 23
SME Validation of Survey Findings 23
Representativeness of Knowledge Statements 23
Reliability of Instrument 23
Knowledge Statements 23
Importance of Knowledge Statements 23
Knowledge Statement Subgroup Analysis 29
Primary Job Title 29
Facility 29
Laboratory Values 29

Laboratory Value Subgroup Analysis 29
Primary Job Title 29
Facility 29
Summary 30
V. Conclusions 31
VI. References 32
Appendix A: 2009 LPN/VN Nursing Knowledge Survey Methodology Reviewers 33
Appendix B: Subject Matter Expert Panel for the 2009 LPN/VN Nursing Knowledge Survey 34
Appendix C: 2009 LPN/VN Nursing Knowledge Survey 37
Appendix D: SME Knowledge Statement Ratings Rank Ordered by Average Importance 43
Appendix E: Newly Licensed LPN/VN and SME Knowledge Statement Ratings Rank Ordered by Newly Licensed LPN/VN Average Importance 46
Appendix F: LPN/VN Educators and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Educator Average Importance 50
Appendix G: LPN/VN Supervisors and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Supervisor Average Importance 54
Appendix H: Laboratory Values Sorted by Survey Order 58
Appendix I: Laboratory Values Ranked by Percent Answering Yes 59
Appendix J: Knowledge Statements Subgroup Analysis: Primary Job Title 60
Appendix K: Knowledge Statements Subgroup Analysis: Facility 65
Appendix L: Laboratory Values Subgroup Analysis: Primary Job Title 70
Appendix M: Laboratory Values Subgroup Analysis: Facility 72
Appendix N: Knowledge Survey Nonresponder Study 74
Appendix O: Linking of Knowledge Statements and Activity Statements 78

LIST OF TABLES

Table 1. Representativeness of Responders by NCSBN Jurisdiction. 13
Table 2. Adjusted Return Rates 15
Table 3. Analyzable Return Rates 15
Table 4. Employment Setting/Specialty 21
Table 5. Most and Least Important Knowledge Statements 24
Table 6. Knowledge Statement Importance Ratings 25
Table 7. Laboratory Value Findings 30

LIST OF FIGURES

Figure 1. Licenses by Primary Job Title 17
Figure 2. Gender by Primary Job Title 17
Figure 3. Survey Coverage Adequacy by Primary Job Title 18
Figure 4. Race/Ethnic Background by Primary Job Title 18
Figure 5. Educational Background by Primary Job Title 19
Figure 6. Primary Language by Primary Job Title 19
Figure 7. Facility by Primary Job Title 20
Figure 8. Client Health Conditions 20
Figure 9. Client Ages by Primary Job Title. 20

ACKNOWLEDGMENTS

This study would not have been possible without support from a large number of newly-licensed practical/vocational nurses (LPN/VNs), LPN/VN educators and LPN/VN supervisors from all parts of the U.S. The time and attention they gave to completing the survey is greatly appreciated, and the information they provided has increased our understanding of the work performed by newly-licensed LPN/VNs. NCSBN also gratefully acknowledges the NCLEX® Examination Committee (NEC) for their review and support of this research endeavor.

EXECUTIVE SUMMARY

The National Council of State Boards of Nursing (NCSBN®) is responsible to its members, the boards of nursing in the U.S. and member board territories, for the preparation of psychometrically sound and legally defensible licensure examinations (American Educational Research Association, American Psychological Association and National Council on Measurement in Education, 1999). Practice analysis studies assist NCSBN in evaluating the validity of the test plan that guides content distribution of the licensure examination. Because changes can occur in LPN/VN practice, NCSBN conducts practice analysis studies every three years.

The primary purpose of this study is to identify the knowledge needed by newly-licensed LPN/VNs. Results of this study (i.e., the important knowledge statements) will be used to inform item development. As with other new NCSBN research projects, there is a possibility that the knowledge statements may become an integral part of other processes (e.g., test specifications). However, at this time, these knowledge statements will be used solely to inform item development.

METHODOLOGY

A number of steps are necessary to perform an analysis of the knowledge needed by newly-licensed LPN/VNs. This section provides a description of the methodology used to conduct the 2009 LPN/VN Nursing Knowledge Survey. Descriptions of subject matter expert (SME) panel processes, survey development, sample selection and data collection procedures are provided, as well as information about confidentiality, response rates and the degree to which participants were representative of the sample of Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors.

Methodology Reviewers

There were three methodology reviewers, chosen for their psychometric expertise in practice/job analysis and certification exam development, who reviewed the methodologies and procedures utilized in this study. All three reviewers indicated these methodologies were psychometrically sound, legally defensible and in compliance with professional testing standards.

Panel of SMEs

A panel of nine LPN/VN SMEs was assembled to assist with the creation of the knowledge statements and survey. Panel members taught LPN/VN students, supervised newly-licensed LPN/VNs or were newly-licensed LPN/VNs themselves. One member also served on the 2009 LPN/VN Practice Analysis Subject Matter Expert Panel and agreed to serve on this panel to provide continuity between the panels. The panelists represented the four NCSBN geographic areas, as well as major nursing specialties and practice settings.

Survey Development

A number of processes were used to create, evaluate and refine the survey instrument used for the 2009 LPN/VN Nursing Knowledge Survey. In the initial meetings for the triennial practice analysis, a panel of nurses, representing different geographic regions of the country and specialties, met and developed nursing activity statements, which represented newly-licensed LPN/VN practice. These activity statements and the category structure developed by the SMEs provided a categorical structure for the creation of the knowledge statements. Following the work of the first panel, a second group of SMEs convened with one panelist bridging the two panels.

This second panel reviewed the activity statements as provided and then developed knowledge statements for each activity statement. The knowledge statements are intended to provide more detailed information regarding the knowledge needed by newly-licensed LPN/VNs in order to perform nursing activities. The knowledge statements were reviewed and edited by the NEC. The resulting 116 knowledge statements were incorporated into a survey format. In addition to knowledge statements, the NEC felt it was important to gather empirical data regarding the need for newly-licensed LPN/VNs to recall specific normal laboratory values for 30 specific laboratory tests.

The final version of the survey contained four sections. The first section began with the initial identification of responder characteristics and then focused on the knowledge necessary for newly-licensed LPN/VN practice, asking responders to rate the importance of each knowledge statement by using a 1 to 5 point scale. In addition, as noted above, responders were asked whether it is important to memorize 30 specific normal laboratory values (using a yes/no scale). Section two identified the participant's work environment, including area of practice, type of client and employment setting/specialty. Section three focused on demographic information, such as racial/ethnic background, highest obtained education degree and gender. The final section asked participants to provide contact information if they were willing to answer additional questions by phone or e-mail.

Survey Process

Sample Selection

Newly Licensed LPN/VNs: A random sample of 2,150 LPN/VNs was selected from a list of candidates who passed the NCLEX-PN® Examination between Jan. 1 and Feb. 17, 2009. Only candidates with a U.S. mailing address within the jurisdiction in which they were seeking licensure were included in the sample. This strategy was employed to minimize the number of incorrect addresses to which surveys would be sent.

LPN/VN Educators: In addition, surveys were sent to 2,100 LPN/VN Educators at 700 different nursing programs. There were three surveys sent to each dean/director of the nursing program to distribute to (1) a medical/surgical (med/surg) nursing instructor; (2) an obstetrics-gynecology/pediatric (OB-GYN/peds) nursing instructor; and (3) a mental health or community health nursing instructor. Each of the programs in the sample had at a minimum of nine NCLEX candidates within the last two calendar years (2007 and 2008). In the event that faculty was unable to complete the survey, the dean/directors were asked to give the survey to a med/surg faculty member.

LPN/VN Supervisors: Finally, 2,100 employers (from 700 nursing homes, 700 hospitals and 700 home health agencies) of newly-licensed LPN/VNs were surveyed. This list came from a substantially larger mailing list, but the selection of employers to be included in the survey was also based upon the number of LPN/VN employees working for the facility. This criterion was applied in order to maximize the likelihood that the employer would have some newly-licensed LPN/VNs and supervisors of newly-licensed LPN/VNs.

Representativeness

Because multiple surveys were sent to LPN/VN Educators of the same institution, all responders from an institution were counted as one in the representativeness calculation. The percentage of responders from the various NCSBN member board jurisdictions is similar to the sample distribution.

Mailing Procedure

Survey forms were mailed to a total of 6,350 potential responders (2,150 Newly Licensed LPN/VNs, 2,100 LPN/VN Educators and 2,100 LPN/VN Supervisors). A five-stage mailing process was used to engage the participants in the study. A presurvey letter was sent to each person or facility selected for the sample. One week later, the survey, with a cover letter and a postage-paid return envelope, was mailed. One week after that, a postcard was sent to all participants reiterating the importance of the study and urging participation. Approximately two weeks after the first postcard, a second reminder postcard was sent. A final reminder was sent to non-responders approximately 10 days after the second reminder. The survey was conducted from April through July 2009.

Confidentiality

All potential participants were promised confidentiality with regard to their participation and their responses. Preassigned codes were used to facilitate follow-up mailings. Files containing mailing information were kept separate from the data files. The study protocol was approved by NCSBN's CEO for compliance with organizational guidelines for research studies involving human subjects.

Return Rates

Of the 6,350 surveys sent, 370 were returned due to incorrect addresses, leaving 5,980 valid invitees. Surveys were returned by 1,664 responders for an adjusted return rate of 27.8%. Within each primary job title, the number of surveys returned due to bad addresses was 39 Newly Licensed LPN/VNs, 33 LPN/VN Educators and 298 LPN/VN Supervisors, resulting in adjusted return rates of 25.9%, 39.8% and 16.4%, respectively.

Of the 1,664 surveys received, 69 responders did not hold either an LPN/VN or a registered nurse (RN) license, or failed to answer the question on job title. As part of the quality control procedures, responses from individuals who did not answer these two questions were removed from the database. The analyzable return rates were 24.9%, 39.1% and 14.5% for Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors, respectively. There were 1,595 analyzable surveys or a return rate of 26.7% for the total group.

Knowledge Survey Nonresponder Study

In order to ensure the validity of the results, NCSBN conducted a telephone survey of nonresponders to determine if those LPN/VNs not responding would have rated the knowledge statements differently than the survey responders. If there are no systematic differences in responders versus nonresponders, it would seem that the results are not biased and the nonresponder study provided evidence to support the validity of survey results. Of the LPN/VNs not participating in the survey, a stratified random sample of Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors were contacted via telephone. Of the potential contacts, a telephone interview was obtained from 90 nurses: 30 Newly Licensed LPN/VNs, 30 LPN/VN Educators and 30 LPN/VN Supervisors. The study found that the majority of nonresponders were either too busy to respond or did not receive the initial survey invitation. More importantly, the study found that the nonresponders rated the knowledge statements similarly to how responders rated them; this similarity supports the validity of the results of this study.

Summary

Sample Selection

A panel of SMEs experienced in the practices of newly-licensed LPN/VNs or were newly-licensed LPN/VNs themselves met and created a list of 116 knowledge statements that are important for a newly-licensed LPN/VN to know. A data collection instrument was developed and sent to 6,350 individual nurses. The surveyed nurses were divided into the following primary job titles: 2,150 Newly Licensed LPN/VNs, 2,100 LPN/VN Educators (obtained by sending three surveys to 700 nursing programs) and 2,100 LPN/VN Supervisors (obtained by sending a survey to 700 home health agencies, 700 hospitals and 700 nursing homes). A 26.7% response rate of analyzable surveys was obtained from the total group. This analysis contains the responses of 527 Newly Licensed LPN/VNs, 822 LPN/VN Educators and 246 Supervisors.

Demographics, Experiences and Practice Environments of Participants

Demographics/Past Experiences

Demographic information, including racial and ethnic backgrounds, educational preparation and gender are presented next, followed by descriptions of responders' work environments, including settings and client characteristics.

Nursing Licenses Held

Responders were asked what type of nursing licenses they held, with the option of choosing LPN/VN and/or RN licenses. All of the Newly Licensed LPN/VNs responding to the survey held an LPN/VN license. Only 5.1% of LPN/VN Educators and 5.3% of LPN/VN Supervisors held an LPN/VN license. The remainder of the respondents held RN licenses.

Gender

The majority of survey responders (93.8%) reported their gender as female: Newly Licensed LPN/VNs (91.6%), LPN/VN Educators (95.9%) and LPN/VN Supervisors (91.7%).

Survey Adequacy

The responders were asked to rate how well the knowledge statements represented the knowledge areas a newly-licensed LPN/VN should possess by choosing one of four options: Poorly, Adequately, Well or Very Well. The majority of survey responders within each job title reported the survey covered the important knowledge areas of a newly-licensed LPN/VN Well or Very Well. Approximately 92.9% of Newly Licensed LPN/VNs, 92.8% of LPN/VN Educators and 89.6% of LPN/VN Supervisors rated knowledge areas needed by Newly-Licensed LPN/VNs as well or very well.

Age

Of the responders who elected to provide data regarding their age, Newly Licensed LPN/VNs had an average age of 34.0 years, LPN/VN Educators' average age was 49.9 years and LPN/VN Supervisors' average age was 49.6 years.

Race/Ethnic Background

White - Not of Hispanic Origin was the ethnic background identified most frequently by Newly Licensed LPN/VNs (55.1%), LPN/VN Educators (89.2%) and LPN/VN Supervisors (85.7%).

Education Background

The majority of Newly Licensed LPN/VNs (82.9%) reported having an LPN/VN diploma or certificate. Approximately 35.7% of LPN/VN Educators listed their highest degree as an RN Baccalaureate degree or an RN Master's degree earned within the U.S. (22.3%). LPN/VN Supervisors listed their highest degree as RN Associate degree (29.5%) or an RN Baccalaureate degree earned within the U.S. (26.9%).

Primary Language

The majority of Newly Licensed LPN/VNs (77.6%), LPN/VN Educators (97.4%) and LPN/VN Supervisors (94.2%) reported English as their primary language.

Years of Experience

Newly Licensed LPN/VNs were asked how long it had been since they graduated from their nursing program and they reported an average of almost one year (11.6 months). There were large variations in months and years LPN/VN Educators and LPN/VN Supervisors worked in their jobs. LPN/VN Supervisors had spent the longest time at their jobs (16 years) compared to LPN/VN Educators, who spent an average of 8.8 years in their jobs.

Facilities

The majority of Newly Licensed LPN/VNs (50.9%) and LPN/VN Supervisors (51.1%) worked in long-term care. LPN/VN Educators worked most frequently in hospitals (62.7%).

Client Health Conditions

The majority of Newly Licensed LPN/VNs (51.0%) worked with clients having stabilized chronic conditions. LPN/VN Educators (69.7%) and LPN/VN Supervisors (60.2%) reported working with clients exhibiting acute conditions. A large percentage of LPN/VN Supervisors also worked with clients having unstabilized chronic health conditions (58.1%). As nurses often work with clients with varying conditions, responders were allowed to give multiple answers, resulting in percentages within each job title totaling more than 100%.

Client Ages

The most frequent response for Newly Licensed LPN/VNs (69.3%), LPN/VN Educators (75.5%) and LPN/VN Supervisors (83.7%) was caring for older adults aged 65-85. The ability to give multiple answers allows for percentages to equal more than 100%.

Employment Setting/Specialty

The employment setting most frequently given by Newly Licensed LPN/VNs (46.9%) and LPN/VN Supervisors (50.8%) was nursing homes. LPN/VN Educators (57.5%) most frequently answered med/surg units. On average, for all primary job titles, the least reported employment settings were occupational health (0.2%) and public health (0.8%). Responders were able to answer up to two employment settings, allowing for percentages totaling more than 100%.

Summary

The average Newly Licensed LPN/VN responder was an English-speaking, White female with an average age of 34 years. She held an LPN/VN diploma/certificate and primarily worked in a long-term care facility caring for older adults (ages 65-85) with stabilized chronic health conditions. She had been an LPN/VN for just under one year.

The average LPN/VN Educator responder was an English-speaking, White female with an average age of 49.9 years. She held an RN Baccalaureate degree from an institution within the U.S. She primarily worked in a hospital caring for older adults (ages 65-85) with acute conditions. She had been an LPN/VN Educator for almost nine years.

The average LPN/VN Supervisor responder was an English-speaking, White female with an average age of 49.6 years. She held an RN Associate or Baccalaureate degree from an institution within the U.S. She worked in long-term care facilities caring for older clients (ages 65-85) exhibiting acute, as well as unstabilized, chronic health conditions. On average, she had been a LPN/VN supervisor for 16 years.

KNOWLEDGE STATEMENT AND LABORATORY VALUE FINDINGS

Overview of Methods

The 2009 LPN/VN Nursing Knowledge Survey asked responders to rate the importance of knowledge statements necessary for a newly-licensed LPN/VN to practice safely and effectively. Responders were asked to rate the overall importance of each knowledge statement considering safe and effective professional LPN/VN practice, regardless of practice setting. Importance was rated by using a five-point (1-5) scale.

SME Validation of Survey Findings

The SME Panel for the 2009 LPN/VNs Nursing Knowledge Survey was asked to provide independent ratings of the 116 knowledge statements.

In order to validate the results of the survey, the importance ratings estimated by SMEs were compared to the average importance ratings from the knowledge survey. There was, in general, consistency among the highest importance ratings for Newly Licensed LPN/VNs, LPN/VN Educators, LPN/VN Supervisors and SMEs. Additionally, there was consistency among the knowledge statements ranked lowest in importance among Newly Licensed LPN/VNs, LPN/VN Educators, LPN/VN Supervisors and SMEs. There seems to be evidence from several sources that provide convergent validity on the knowledge needed by newly-licensed LPN/VNs in order to practice safely and effectively.

The importance ratings of SMEs compared to the ratings of each subgroup were very similar. In fact, there were no knowledge statement ratings that were one point different between SMEs and Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors. Again, the information on knowledge needed by newly-licensed LPN/VNs from multiple sources provides a more accurate description than a single source.

Representativeness of Knowledge Statements

The participants were asked whether the knowledge areas listed on the survey represented knowledge that a newly-licensed LPN/VN should possess. A large percentage of Newly Licensed LPN/VNs (64.4%), LPN/VN Educators (56.8%) and LPN/VN Supervisors (62.1%) responded that the survey represented the necessary knowledge Very Well. Moreover, 92.9% of Newly Licensed LPN/VNs, 92.8% of LPN/VN Educators and 89.6% of LPN/VN Supervisors noted that the knowledge statements covered the knowledge that a newly-licensed LPN/VN should possess Well or Very Well.

Reliability of Instrument

A reliability index (coefficient alpha) was calculated to evaluate the internal consistency of the survey instrument. Alpha coefficients range from 0 to 1; a value of 0.7 or greater is considered adequate (Cronbach, 1951). The resulting value of 0.98 for this survey instrument suggests this survey reliably measures the knowledge that a newly-licensed LPN/VN needs for safe and effective practice.

Knowledge Statements

Importance of Knowledge Statements

The safe and effective practice of newly-licensed LPN/VNs was determined by participants' responses based on an importance rating scale. The responders were asked, "How important is the possession of this knowledge by a newly-licensed LPN/VN for safe and effective professional practice, regardless of specific practice setting?" Importance ratings were recorded using a five-point scale: 1 = Not Important; 2 = Marginally Important; 3 = Moderately Important; 4 = Important; and 5 = Critically Important. Average importance ratings were calculated by including all importance ratings regardless of practice setting. The SME panel ratings and survey respondent ratings of the 116 knowledge statements yielded very similar results.

All primary job titles (Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors) rated vital signs and aseptic and sterile techniques among the five most important knowledge statements. In terms of the least important knowledge statements, all primary job titles (including the SMEs) rated insurance requirements and inventory control as the two least important, with alternative/complementary therapy also among the five least important knowledge statements.

Knowledge Statement Subgroup Analysis

Primary Job Title

The average knowledge statement importance ratings of Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors were cross-analyzed for meaningful differences among these job titles. The least important knowledge statement for Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors was insurance requirements, with an average value of 3.15, 2.71 and 2.64, respectively. The most important knowledge statement for Newly Licensed LPN/VNs and LPN/VN Supervisors was vital signs, with an average value of 4.76 and 4.81. LPN/VN Educators rated how to correctly identify clients as the most important knowledge statement, with an average value of 4.89. In general, there were few differences in importance ratings based upon job title.

Facility

The average importance ratings of the knowledge statements for responders from hospitals, long-term care facilities, community-based facilities and other facilities were cross-analyzed for meaningful differences. Responders who worked in one of the four types of facilities rated insurance requirements and inventory control as the least important knowledge statements; the average ratings for insurance requirements were 2.70, 2.96, 3.07 and 2.77 and the average ratings for inventory control were 2.80, 3.00, 3.06 and 2.94, respectively. The most important knowledge statement for responders working in long-term care, community-based and other facilities was vital signs, with average importance ratings of 4.80, 4.78 and 4.87. This knowledge statement was the third most important for responders working in hospitals, with an average rating of 4.85. The two most important knowledge statement for responders working in hospitals were aseptic and sterile techniques, and how to correctly identify clients, both with an average rating of 4.86; aseptic and sterile techniques was the second most important for responders working in community-based facilities and the third most important for responders working in other facilities.

Laboratory Values

The importance of memorizing specific normal laboratory values with regard to the safe and effective practice of newly-licensed LPN/VNs was determined by participants' yes or no responses to each laboratory value listed in the survey.

Laboratory Value Subgroup Analysis

Primary Job Title

The percentages of responders answering yes to the importance of memorizing the normal laboratory values listed in the survey were cross-analyzed among Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors. Of the Newly Licensed LPN/VNs, 39.7% answered that newly-licensed

nurses needed to know normal lab value for AST (SGOT). There were 17.3% of LPN/VN Educators and 13.6% of LPN/VN Supervisors who answered that newly-licensed nurses needed to remember normal lab value for phosphorus/phosphate. The highest percent answering yes to memorizing the normal lab value for glucose was 95.8% of Newly Licensed LPN/VNs, 96.3% of LPN/VN Educators and 91.4% of LPN/VN Supervisors.

Facility

The need to memorize laboratory values based upon responder answers to the facility demographic was cross-analyzed for possible meaningful differences among the facility settings: hospital, long-term care facility, community-based facility and other. Every facility subgroup answered normal lab value for phosphorus/phosphate as the lowest value percentage, with percentages of 19.0% (hospital), 30.1% (long-term care), 32.0% (community-based facility) and 25.3% (other). Memorizing normal lab value for glucose was answered most often among all four facilities with percentages of 95.8% (hospital), 94.3% (long-term care), 96.1% (community-based facility) and 96.6% (other).

Summary

Responders to the 2009 LPN/VNs Nursing Knowledge Survey found the statements listed in the survey to be representative of the knowledge necessary for safe and effective professional practice of newly-licensed LPN/VNs. There were similar importance ratings of the knowledge statements for Newly Licensed LPN/VNs, LPN/VN Educators, LPN/VN Supervisors and SMEs.

CONCLUSION

Based upon the reliability of the knowledge statement instrument, the survey of nonresponders, the validation of the knowledge statement importance ratings by SME, and the similarity of knowledge statement importance ratings by Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors, the results of this survey can be used to inform item development.

Report of Findings from the

2009 LPN/VN Nursing Knowledge Survey

National Council of State Boards of Nursing, Inc. (NCSBN®)

BACKGROUND OF STUDY

The National Council of State Boards of Nursing (NCSBN®) is responsible to its members, the boards of nursing in the U.S. and member board territories, for the preparation of psychometrically sound and legally defensible licensure examinations (American Educational Research Association, American Psychological Association and National Council on Measurement in Education, 1999). Practice analysis studies assist NCSBN in evaluating the validity of the test plan that guides content distribution of the licensure examination. Because changes can occur in licensed practical/vocational (LPN/VN) practice, NCSBN conducts the practice analysis every three years.

The primary purpose of this study is to identify the knowledge needed by newly-licensed LPN/VNs for safe and effective entry-level practice. Results from this study (i.e., the important knowledge statements) will be used to inform item development. As with other new NCSBN research projects, there is a possibility that the knowledge statements may become an integral part of other processes (e.g., test specifications). However, at this time, these statements will be used solely to inform item development.

METHODOLOGY

A number of steps are necessary to perform an analysis of the knowledge needed by newly-licensed LPN/VNs. This section provides a description of the methodology used to conduct the 2009 LPN/VN Nursing Knowledge Survey. Descriptions of subject matter expert (SME) panel processes, survey development, sample selection and data collection procedures are provided, as well as information about confidentiality, response rates and the degree to which participants were representative of the population of Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors.

Methodology Reviewers

There were three methodology reviewers, chosen for their psychometric expertise in practice/job analysis and certification exam development, who reviewed the methodologies and procedures utilized in this study. All three reviewers indicated these methodologies were psychometrically sound, legally defensible and in compliance with professional testing standards. *See Appendix A for a listing of methodology reviewers.*

Panel of SMEs

A panel of nine LPN/VNs was assembled to assist with the creation of the nursing knowledge survey. Panel members all worked with and/or supervised the practice of newly-licensed LPN/VNs within their first six months of practice or were newly-licensed LPN/VNs themselves. One member served on the 2009 LPN/VN Practice Analysis Subject Matter Expert Panel and agreed to serve on this panel in order to provide continuity between the panels. The panelists also represented the four geographic areas of NCSBN constituents, as well as major nursing specialties. *See Appendix B for a list of panel members.*

Survey Development

A number of processes were used to create, evaluate and refine the survey instrument used for the 2009 LPN/VN Nursing Knowledge Survey. In the initial meetings for the triennial practice analysis, a panel of nurses, representing different geographic regions of the country and specialties, met and developed nursing activity statements which represented newly-licensed LPN/VN practice. These activity statements provided a categorical structure for the creation of the knowledge statements. Following the work of the first panel, a second panel of nurses was convened, with one panelist bridging the two panels.

This second panel reviewed the activity statements as provided and then developed knowledge statements for each activity statement. The link between knowledge statements and activity statements can be seen in Appendix O. While developing the knowledge statements for the survey, past practice activity statements were considered. The knowledge statements were then reviewed and edited by the NCLEX® Examination Committee (NEC). The resulting 116 knowledge statements were incorporated into a survey format. In addition to knowledge statements, the NEC felt it was important to gather empirical data regarding the need for newly-licensed LPN/VNs to recall specific normal laboratory values for 30 laboratory tests.

The final version of the survey contained four sections. The first section began with the initial identification of responder characteristics and then focused on the knowledge necessary for newly-licensed LPN/VN practice, asking responders to rate the importance of each knowledge statement by using a 1-5 point scale. In addition, as noted above, responders were asked whether it is important to memorize 30 specific normal laboratory values (choosing either yes or no). Responders were also given the opportunity to indicate how well the survey covered important knowledge areas a newly-licensed LPN/VN should possess, regardless of practice setting, and then to provide suggestions for important knowledge areas not covered by the survey. Section two identified the participant's work environment, including area of practice, type of client and employment setting/specialty. Section three focused on demographic information, such as racial/ethnic background, highest obtained education degree and gender. The final section asked

participants to provide contact information if they would be willing to answer additional questions by phone or e-mail. The survey used in the 2009 LPN/VN Nursing Knowledge Survey may be found in Appendix C.

Survey Process

Sample Selection

Newly Licensed LPN/VNs: A random sample of 2,150 LPN/VNs was selected from a list of candidates who passed the NCLEX-PN® Examination between Jan. 1 and Feb. 17, 2009. Only candidates with a U.S. mailing address within the jurisdiction in which they were seeking licensure were included in the sample. This strategy was employed to minimize the number of incorrect addresses to which surveys would be sent.

LPN/VN Educators: In addition, surveys were sent to 2,100 LPN/VN Educators at 700 different nursing programs. There were three surveys sent to each dean/director of the nursing program with instructions for them to distribute the surveys to (1) a medical/surgical (med/surg) nursing instructor; (2) an obstetrics-gynecology/pediatric (OB-GYN/peds) nursing instructor; and (3) a mental health or community health nursing instructor. Each of the programs in the sample had a minimum of nine NCLEX candidates within the last two calendar years (2007 and 2008). In the event that faculty was unable to complete the survey, the dean/directors were asked to give the survey to a med/surg faculty member.

LPN/VN Supervisors: Finally, 2,100 employers (from 700 nursing homes, 700 hospitals and 700 home health agencies) of newly-licensed LPN/VNs were surveyed. This list came from a substantially larger mailing list, but the selection of employers to be included in the survey was also based upon the number of LPN/VN employees working for the company. This criterion was applied in order to maximize the likelihood that the employer would have some newly-licensed LPN/VNs and supervisors of newly-licensed LPN/VNs.

Representativeness

Table 1 presents the correspondence of samples and responders within each primary job title by NCSBN jurisdiction. Because multiple surveys were sent to LPN/VN Educators of an institution, all responders from a single institution were counted only as one in the representativeness calculation. As shown in

Table 1. Representativeness of Responders by NCSBN Jurisdiction

	Newly Licensed LPN/VN				LPN/VN Educator				LPN/VN Supervisor			
	Sample		Responder		Sample		Responder		Sample		Responder	
Jurisdiction	N	%	N	%	N	%	N	%	N	%	N	%
Alabama	23	1.08	4	0.73	24	1.20	13	1.60	50	2.50	8	2.72
Alaska	0	0.00	0	0.00	3	0.10	0	0.00	2	0.10	0	0.00
American Samoa	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Arizona	20	0.94	3	0.55	21	1.00	10	1.20	22	1.10	4	1.36
Arkansas	40	1.87	13	2.38	36	1.70	2	0.20	32	1.60	7	2.38
California	298	13.94	86	15.75	240	11.50	52	6.30	197	9.83	24	8.16
Colorado	18	0.84	3	0.55	39	1.90	6	0.70	17	0.85	2	0.68
Connecticut	22	1.03	5	0.92	39	1.90	15	1.80	17	0.85	2	0.68
Delaware	18	0.84	6	1.10	12	0.60	7	0.90	4	0.20	1	0.34
District of Columbia	1	0.05	1	0.18	9	0.40	0	0.00	13	0.65	0	0.00
Florida	145	6.78	41	7.51	102	4.90	52	6.30	123	6.14	11	3.74
Georgia	57	2.67	13	2.38	90	4.30	21	2.60	71	3.54	8	2.72
Guam	0	0.00	0	0.00	3	0.10	0	0.00	0	0.00	0	0.00
Hawaii	6	0.28	1	0.18	6	0.30	3	0.40	2	0.10	0	0.00
Idaho	13	0.61	5	0.92	6	0.30	3	0.40	4	0.20	0	0.00

Table 1. Representativeness of Responders by NCSBN Jurisdiction

	Newly Licensed LPN/VN				LPN/VN Educator				LPN/VN Supervisor			
	Sample		Responder		Sample		Responder		Sample		Responder	
Jurisdiction	N	%	N	%	N	%	N	%	N	%	N	%
Illinois	61	2.85	23	4.21	66	3.20	25	3.00	43	2.15	4	1.36
Indiana	49	2.29	8	1.47	48	2.30	20	2.40	61	3.04	7	2.38
Iowa	37	1.73	7	1.28	27	1.30	17	2.10	13	0.65	2	0.68
Kansas	27	1.26	4	0.73	21	1.00	12	1.50	10	0.50	0	0.00
Kentucky	39	1.82	9	1.65	24	1.20	6	0.70	37	1.85	4	1.36
Louisiana	58	2.71	7	1.28	54	2.60	23	2.80	65	3.24	3	1.02
Maine	1	0.05	0	0.00	3	0.10	0	0.00	0	0.00	0	0.00
Maryland	34	1.59	13	2.38	15	0.70	8	1.00	23	1.15	1	0.34
Massachusetts	22	1.03	5	0.92	39	1.90	11	1.30	28	1.40	2	0.68
Michigan	64	2.99	18	3.30	43	2.10	22	2.70	44	2.20	7	2.38
Minnesota	52	2.43	16	2.93	54	2.60	35	4.30	50	2.50	9	3.06
Mississippi	27	1.26	6	1.10	33	1.60	13	1.60	18	0.90	4	1.36
Missouri	31	1.45	5	0.92	81	3.90	42	5.10	39	1.95	6	2.04
Montana	3	0.14	1	0.18	6	0.30	5	0.60	3	0.15	0	0.00
Nebraska	8	0.37	1	0.18	24	1.20	9	1.10	10	0.50	1	0.34
Nevada	0	0.00	0	0.00	3	0.10	3	0.40	10	0.50	0	0.00
New Hampshire	3	0.14	1	0.18	9	0.40	7	0.90	2	0.10	0	0.00
New Jersey	45	2.10	14	2.56	52	2.50	16	1.90	49	2.45	13	4.42
New Mexico	8	0.37	1	0.18	12	0.60	6	0.70	4	0.20	0	0.00
New York	110	5.14	32	5.86	117	5.60	34	4.10	179	8.93	36	12.24
North Carolina	30	1.40	12	2.20	54	2.60	23	2.80	32	1.60	6	2.04
North Dakota	12	0.56	0	0.00	9	0.40	3	0.40	4	0.20	3	1.02
Northern Mariana Islands	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Ohio	176	8.23	52	9.52	93	4.50	50	6.10	125	6.24	26	8.84
Oklahoma	43	2.01	7	1.28	63	3.00	18	2.20	50	2.50	6	2.04
Oregon	11	0.51	3	0.55	24	1.20	16	1.90	1	0.05	0	0.00
Pennsylvania	118	5.52	29	5.31	85	4.10	53	6.40	126	6.29	26	8.84
Rhode Island	1	0.05	0	0.00	0	0.00	0	0.00	5	0.25	0	0.00
South Carolina	23	1.08	10	1.83	15	0.70	6	0.70	22	1.10	3	1.02
South Dakota	7	0.33	3	0.55	6	0.30	1	0.10	1	0.05	0	0.00
Tennessee	33	1.54	3	0.55	27	1.30	17	2.10	52	2.59	10	3.40
Texas	176	8.23	33	6.04	135	6.50	46	5.60	213	10.63	25	8.50
Utah	30	1.40	9	1.65	18	0.90	10	1.20	4	0.20	1	0.34
Vermont	0	0.00	0	0.00	6	0.30	2	0.20	4	0.20	1	0.34
Virgin Islands	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Virginia	55	2.57	14	2.56	90	4.30	29	3.50	69	3.44	9	3.06
Washington	38	1.78	12	2.20	39	1.90	20	2.40	13	0.65	2	0.68
West Virginia	4	0.19	2	0.37	27	1.30	18	2.20	22	1.10	7	2.38
Wisconsin	37	1.73	5	0.92	21	1.00	10	1.20	18	0.90	3	1.02
Wyoming	4	0.19	0	0.00	6	0.30	3	0.40	1	0.05	0	0.00
Total	2,138	100.00	546	100.00	2,079	100.00	823	100.00	2,004	100.00	294	100.00
Total	**2,138**	**100.0**	**546**	**100.00**	**2,079**	**100.00**	**823**	**100.00**	**2,019**	**100.00**	**295**	**100.00**

Table 1, the percentage of responders from different jurisdictions is similar to the sample distribution.

Mailing Procedure

Survey forms were mailed to a total of 6,350 potential responders (2,150 Newly Licensed LPN/VNs, 2,100 LPN/VN Educators and 2,100 LPN/VN Supervisors). A five-stage mailing process was used to engage the participants in the study. A presurvey letter was sent to each person or facility selected for the sample. One week later, the survey, with a cover letter and a postage-paid return envelope, was mailed. One week after that, a postcard was sent to all participants reiterating the importance of the study and urging participation. Approximately two weeks after the first postcard, a second reminder postcard was sent. A final reminder was sent to nonresponders approximately 10 days after the second reminder. The survey was conducted from April through July 2009.

Confidentiality

All potential participants were promised confidentiality with regard to their participation and their responses. Preassigned codes were used to facilitate follow-up mailings. Files containing mailing information were kept separate from the data files. The study protocol was approved by NCSBN's CEO for compliance with organizational guidelines for research studies involving human subjects.

Return Rates

Of the 6,350 surveys sent, 370 were returned due to incorrect addresses, leaving 5,980 valid invitees. Surveys were returned by 1,664 responders for an adjusted return rate of 27.8%. Within each primary job title, the number of surveys returned due to bad addresses was 39 Newly Licensed LPN/VNs, 33 LPN/VN Educators and 298 LPN/VN Supervisors, resulting in adjusted return rates of 25.9%, 39.8% and 16.4%, respectively. *See Table 2 for adjusted return rates.*

Of the 1,664 surveys received, 69 responders did not hold either an LPN/VN or RN license or failed to answer the question on job title. As part of the quality control procedures, responses from individuals who did not answer these two questions were removed from the database. The analyzable return rates were 24.9%, 39.1% and 14.5% for Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN

Table 2. Adjusted Return Rates

Job title	Sample	Bad Addresses	Surveys Sent	Adjusted Responses	Adjusted Return Rate
Newly Licensed PNs	2,150	39	2,111	546	25.90%
Educators	2,100	33	2,067	823	39.80%
Supervisors	2,100	298	1,802	295	16.40%
Total	6,350	370	5,980	1,664	27.80%

Table 3. Analyzable Return Rates

Job title	Surveys Sent	Invalid Responses	Analyzable Responses	Analyzable Return Rate
Newly Licensed PNs	2,111	21	525	24.90%
Educators	2,067	14	809	39.10%
Supervisors	1,802	34	261	14.50%
Total	5,980	69	1,595	26.70%

Supervisors, respectively; as seen in Table 3. There were 1,595 analyzable surveys or a return rate of 26.7% for the total group.

Knowledge Survey Nonresponder Study

In order to ensure the validity of the results, NCSBN conducted a telephone survey of nonresponders to determine if those LPN/VNs not responding would have rated the Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors knowledge statements differently than the survey responders. If there are no systematic differences in responders versus nonresponders, it would seem that the results are not biased and the nonresponder study provided evidence to support the validity of survey results. A stratified random sample of Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors who did not participate in the survey were contacted via telephone. Of the potential contacts, a telephone interview was obtained from a total of 90 nurses: 30 Newly Licensed LPN/VNs, 30 LPN/VN Educators and 30 LPN/VN Supervisors. The study found that the majority of nonresponders were either too busy to respond or did not receive the initial survey invitation. More importantly, the study found that the nonresponders rated the knowledge statements similarly to how responders rated them; this similarity supports validity of the results of this study. *See Appendix N for the results of the nonresponder study.*

Summary

A panel of nine SMEs met and created a list of knowledge statements necessary for competent job performance relating to public safety. A data collection instrument was developed and sent to 6,350 individual nurses. The surveyed nurses were divided into the following primary job titles: 2,150 Newly Licensed LPN/VNs, 2,100 LPN/VN Educators and 2,100 LPN/VN Supervisors. An overall 26.7% response rate of analyzable surveys was obtained. This analysis contains the responses of 527 newly-licensed LPN/VNs, 822 LPN/VN Educators and 246 Supervisors.[1]

1 The numbers of responses for the analyses do not match the numbers for each primary job title shown in Table 3. This occurred because the statistics in Tables 1-3 were derived from the primary job title to which the survey was mailed, whereas the analyses were conducted based upon the primary job title to which the respondent identified themselves.

DEMOGRAPHICS, EXPERIENCES, AND PRACTICE ENVIRONMENTS OF PARTICIPANTS

Demographics/Past Experiences

Demographic information, including racial and ethnic backgrounds, educational preparation and gender are presented next, followed by descriptions of responders' work environments, including settings and client characteristics.

Nursing Licenses Held

Responders were asked what type of nursing licenses they held, with the option of choosing LPN/VN and/or RN licenses. All of the Newly Licensed LPN/VNs held an LPN/VN license. Only 5.1% of the LPN/VN Educators and 5.3% of LPN/VN Supervisors held an LPN/VN license. The remainder of the respondents held registered nurse (RN) licenses. Responders were allowed to select both licenses, so percentages do not add up to 100%. *See Figure 1 for a graphical representation of licenses held by primary job title.*

Figure 1. Licenses by Primary Job Title

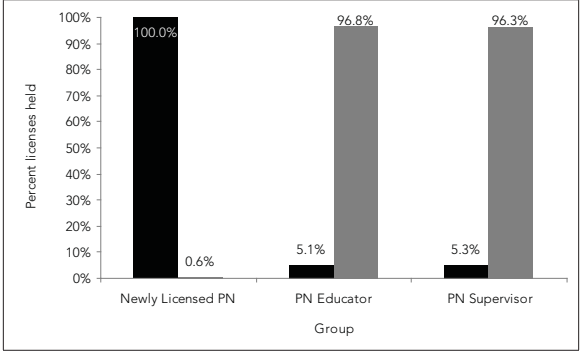
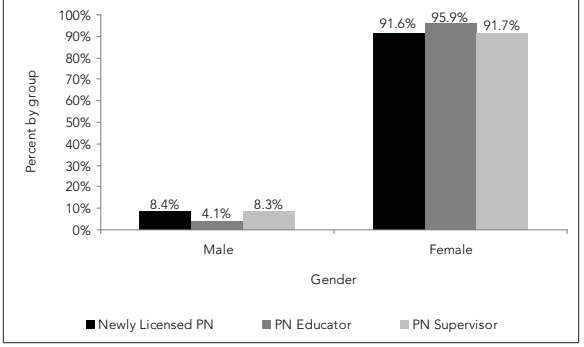


Figure 2. Gender by Primary Job Title



Gender

The majority of survey responders (93.8%) reported their gender as female: Newly Licensed LPN/VNs (91.6%), LPN/VN Educators (95.9%) and LPN/VN Supervisors (91.7%). There were 24 responders who chose not to provide data regarding their gender. *See Figure 2 for gender sorted by primary job title.*

Survey Adequacy

The responders were asked to rate how well the knowledge statements represented the knowledge areas a newly-licensed LPN/VN should possess by choosing one of four options: Poorly, Adequately, Well or Very Well. The majority of survey responders within each job title reported that the survey covered the important knowledge areas of a newly-licensed LPN/VN Well or Very Well. Approximately 92.9% of Newly Licensed LPN/VNs, 92.8% of LPN/VN Educators and 89.6% of LPN/VN Supervisors rated the survey as covering knowledge Well or Very Well. There were 35 responders who elected not to provide this rating. *See Figure 3 for adequacy of knowledge statement coverage sorted by primary job title.*

Age

Of the responders who elected to provide data regarding their age, Newly Licensed LPN/VNs had an average age of 34.0 years, LPN/VN Educators' average age was 49.9 years and LPN/VN Supervisors' average age was 49.6 years.

Race/Ethnic Background

White - Not of Hispanic Origin was the ethnic background identified most frequently by Newly Licensed LPN/VNs (55.1%), LPN/VN Educators (89.2%) and LPN/VN Supervisors (85.7%). There were 45 responders who did not provide data concerning their racial/ethnic background. *See Figure 4 for the racial/ethnic backgrounds of survey responders sorted by primary job title.*

Figure 3. Survey Coverage Adequacy by Primary Job Title

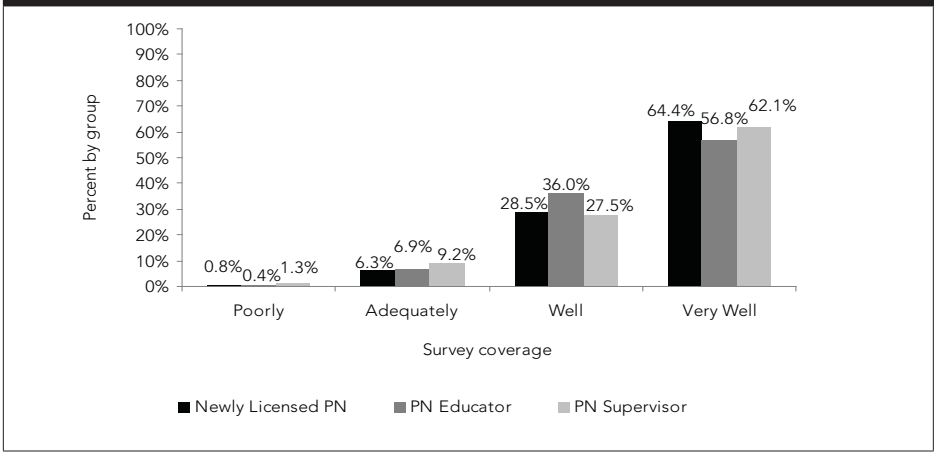
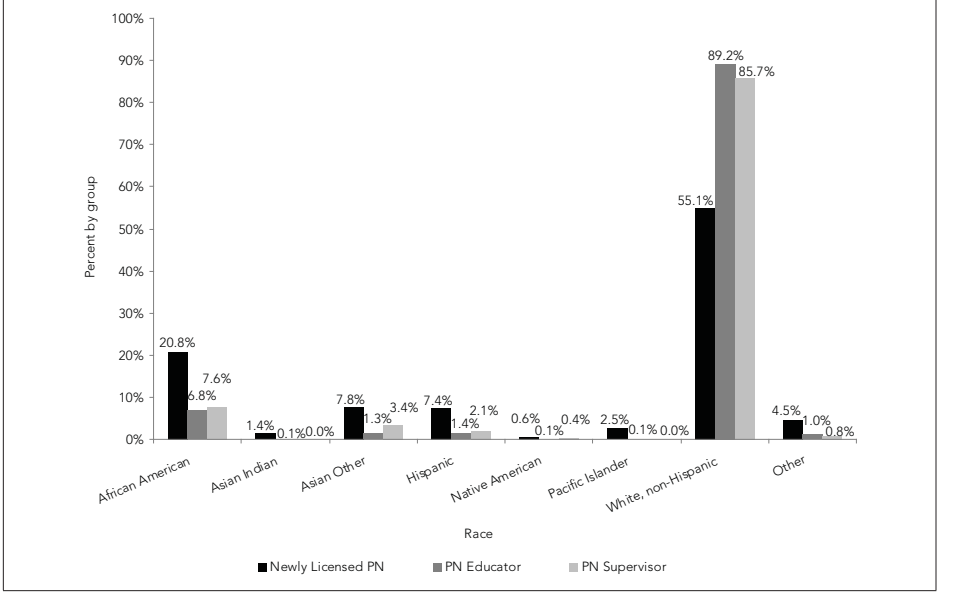


Figure 4. Race/Ethnic Background by Primary Job Title



Education Background

The majority of Newly Licensed LPN/VNs (82.9%) reported having an LPN/VN diploma or certificate. Approximately 35.7% of LPN/VN Educators listed their highest degree as an RN Baccalaureate degree or an RN Master's degree earned within the U.S. (22.3%). LPN/VN Supervisors listed their highest degree as RN Associate degree (29.5%) or an RN Baccalaureate degree earned within the U.S. (26.9%). There were 78 responders who elected not to answer this question. *See Figure 5 for the educational background of responders sorted by primary job title.*

Primary Language

The majority of Newly Licensed LPN/VNs (77.6%), LPN/VN Educators (97.4%) and LPN/VN Supervisors (94.2%) reported English as their primary language. There were 24 responders who elected not to answer this question. *See Figure 6 for primary language sorted by primary job title.*

Years of Experience

Newly Licensed LPN/VNs were asked how long it had been since they graduated from their nursing program and they reported an average of almost one year (11.6 months). There were large variations

Figure 5. Educational Background by Primary Job Title

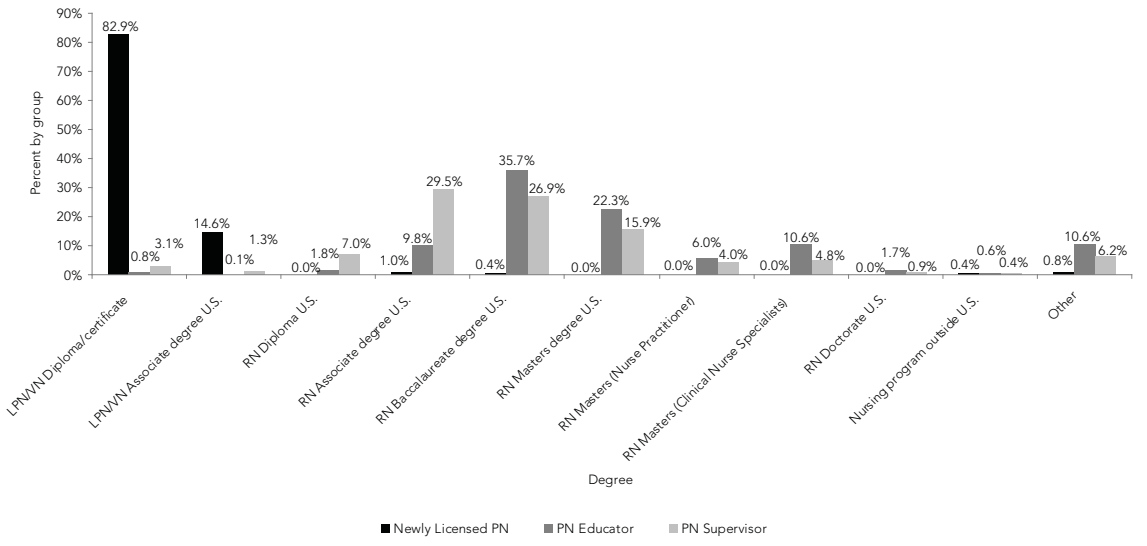
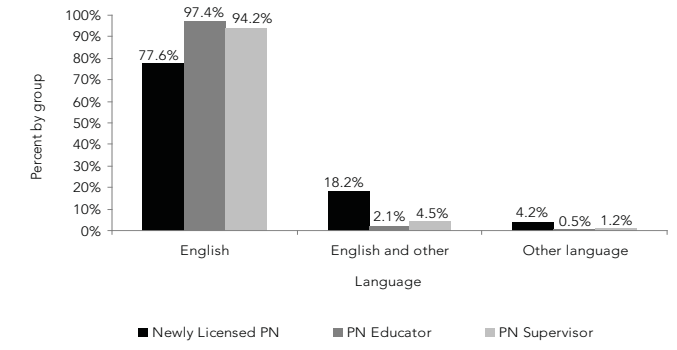


Figure 6. Primary Language by Primary Job Title



in months and years LPN/VN Educators and LPN/VN Supervisors worked in their jobs. LPN/VN Supervisors had spent the longest time at their jobs (16 years) compared to LPN/VN Educators, who spent an average of 8.8 years in their jobs.

Facilities

The majority of Newly Licensed LPN/VNs (50.9%) and LPN/VN Supervisors (51.1%) worked in long-term care. LPN/VN Educators worked most frequently in hospitals (62.7%). *See Figure 7 for responder nurses' facility sorted by primary job title.*[2]

Client Health Conditions

The majority of Newly Licensed LPN/VNs (51.0%) worked with clients having stabilized chronic conditions. LPN/VN Educators (69.7%) and LPN/VN Supervisors (60.2%) reported working with clients exhibiting acute conditions; though a large percentage of LPN/VN Supervisors also worked with

2 Academia is not included as one of the options in the question that asks respondents to indicate the primary facility in which they worked.

Figure 7. Facility by Primary Job Title

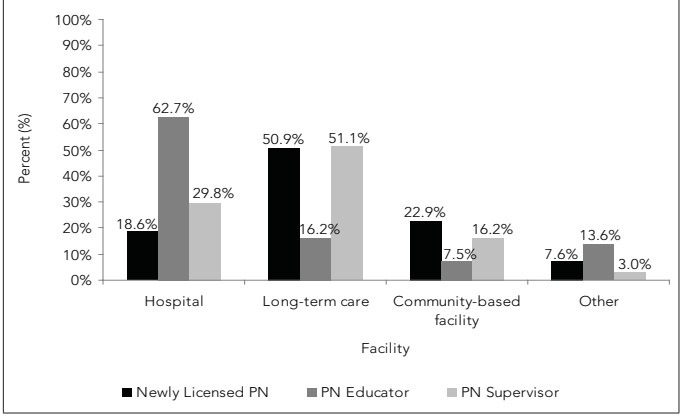


Figure 8. Client Health Conditions

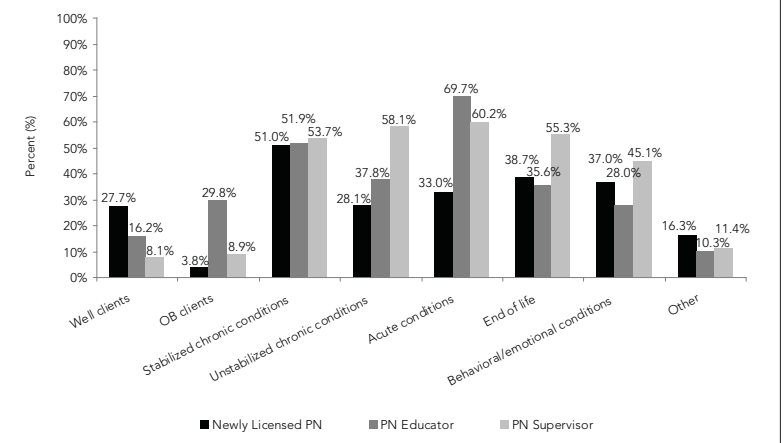
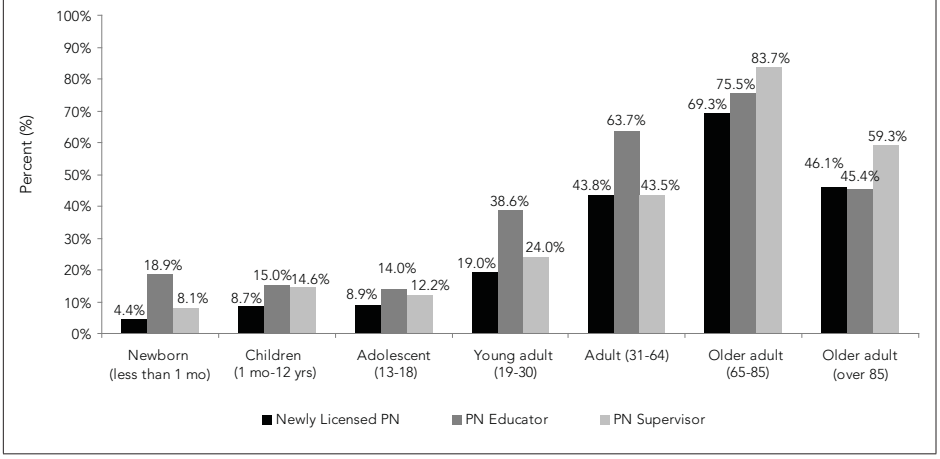


Figure 9. Client Ages by Primary Job Title



clients having unstabilized chronic health conditions (58.1%). As nurses often work with clients with varying conditions, responders were allowed to give multiple answers, resulting in percentages within each job title totaling more than 100%. *See Figure 8 for client conditions sorted by primary job title.*

Client Ages

The most frequent response for Newly Licensed LPN/VNs (69.3%), LPN/VN Educators (75.5%) and LPN/VN Supervisors (83.7%) was caring for older adults aged 65-85. The ability to give multiple answers allows for percentages to equal more than 100%. *See Figure 9 for client ages sorted by primary job title.*

Employment Setting/Specialty

The employment setting most frequently given by Newly Licensed LPN/VNs (46.9%) and LPN/VN Supervisors (50.8%) was nursing homes. LPN/VN Educators (57.5%) most frequently answered med/surg units. On average, for all primary job titles, the least reported employment settings were occupational health (0.2%) and public health (0.8%). Responders were able to answer up to two employment settings, allowing for percentages totaling more than 100%. *See Table 4 for employment settings and specialties.*

Table 4. Employment Setting/Specialty

	Newly Licensed LPN/VN		LPN/VN Educator		LPN/VN Supervisor		Total	
Employment Setting	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Critical care	15	2.8	49	6.0	26	10.6	90	5.6
Medical-surgical unit	57	10.8	473	57.5	60	24.4	590	37.0
Pediatrics	15	2.8	70	8.5	10	4.1	95	6.0
Nursery	2	0.4	48	5.8	4	1.6	54	3.4
Labor and delivery	3	0.6	69	8.4	5	2.0	77	4.8
Postpartum unit	6	1.1	106	12.9	7	2.8	119	7.5
Psychiatry	26	4.9	58	7.1	8	3.3	92	5.8
Operating room	7	1.3	13	1.6	3	1.2	23	1.4
Assisted living	58	11.0	7	0.9	4	1.6	69	4.3
Nursing home	247	46.9	295	35.9	125	50.8	667	41.8
Other long-term care	59	11.2	21	2.6	2	0.8	82	5.1
Rehabilitation	89	16.9	44	5.4	31	12.6	164	10.3
Subacute unit	19	3.6	29	3.5	21	8.5	69	4.3
Transitional care unit	16	3.0	10	1.2	7	2.8	33	2.1
Physician/Dentist office	21	4.0	8	1.0	1	0.4	30	1.9
Occupational health	3	0.6	0	0.0	0	0.0	3	0.2
Outpatient clinic	21	4.0	10	1.2	2	0.8	33	2.1
Home health	57	10.8	10	1.2	39	15.9	106	6.6
Public health	9	1.7	3	0.4	0	0.0	12	0.8
Student/School health	6	1.1	23	2.8	2	0.8	31	1.9
Hospice care	25	4.7	14	1.7	10	4.1	49	3.1
Prison	12	2.3	4	0.5	0	0.0	16	1.0
Other	48	9.1	92	11.2	14	5.7	154	9.7

Summary

The average Newly Licensed LPN/VN responder was an English-speaking, White female with an average age of 34 years. She held an LPN/VN diploma/certificate and primarily worked in a long-term care facility caring for older adults (ages 65-85) with stabilized chronic health conditions. She had been an LPN/VN for just under one year.

The average LPN/VN Educator responder was an English-speaking, White female with an average age of 49.9 years. She held an RN Baccalaureate degree from an institution within the U.S. She primarily worked in a hospital caring for older adults (ages 65-85) with acute conditions. She had been an LPN/VN Educator for almost nine years.

The average LPN/VN Supervisor responder was an English-speaking, White female with an average age of 49.6 years. She held an RN Associate or Baccalaureate degree from an institution within the U.S. She worked in long-term care facilities caring for older clients (ages 65-85) exhibiting acute, as well as unstabilized, chronic health conditions. On average, she had been a LPN/VN supervisor for 16 years.

KNOWLEDGE STATEMENT AND LABORATORY VALUE FINDINGS

Overview of Methods

The 2009 LPN/VN Nursing Knowledge Survey asked responders to rate the importance of knowledge statements necessary for a newly-licensed LPN/VN to practice safely and effectively. Responders were asked to rate the overall importance of each knowledge statement considering safe and effective professional LPN/VN practice, regardless of practice setting. Importance was rated by using a five-point (1-5) scale.

SME Validation of Survey Findings

The SME Panel for the 2009 LPN/VNs Nursing Knowledge Survey was asked to provide independent ratings of the 116 knowledge statements. *See Appendix D for average importance ratings by SMEs.*

In order to validate the results of the survey, the importance ratings estimated by SMEs were compared to the average importance ratings from the knowledge survey. As can be seen in Table 5, there was, in general, consistency among the highest importance ratings for Newly Licensed LPN/VNs, LPN/VN Educators, LPN/VN Supervisors and SMEs. Additionally, there was consistency among the knowledge statement ranked lowest in importance among Newly Licensed LPN/VNs, LPN/VN Educators, LPN/VN Supervisors and SMEs. There seems to be evidence from several sources that provide convergent validity on the knowledge needed by newly-licensed LPN/VNs in order to practice safely and effectively. The ratings of SMEs compared to survey responder ratings, categorized by job titles, are presented in Appendices E, F and G.

The importance ratings of SMEs compared to the ratings of each subgroup were very similar. In fact, there were no knowledge statement ratings that were one point different between the SMEs and the Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors. Again, the information on knowledge needed by newly-licensed LPN/VNs from multiple sources provides a more accurate description than a single source.

Representativeness of Knowledge Statements

The participants were asked whether the knowledge areas listed on the survey represented knowledge a newly-licensed LPN/VN should possess. A large percentage of Newly Licensed LPN/VNs (64.4%), LPN/VN Educators (56.8%) and LPN/VN Supervisors (62.1%) responded that the survey represented the necessary knowledge Very Well. Moreover, 92.9% of Newly Licensed LPN/VNs, 92.8% of LPN/VN Educators and 89.6% of LPN/VN Supervisors noted that the knowledge statements covered the knowledge that a newly-licensed LPN/VN should possess Well or Very Well.

Reliability of Instrument

A reliability index (coefficient alpha) was calculated to evaluate the internal consistency of the survey instrument. Alpha coefficients range from 0 to 1; a value of 0.7 or greater is considered adequate (Cronbach, 1951). The resulting value of 0.98 for this survey instrument suggests this survey reliably measures the knowledge that a newly-licensed LPN/VN needs for safe and effective practice.

Knowledge Statements

Importance of Knowledge Statements

The knowledge needed by newly-licensed LPN/VNs was determined by participants' responses to an importance scale. The responders were asked, "How important is the possession of this knowledge by a newly-licensed LPN/VN for safe and effective professional practice, regardless of specific practice setting?" Importance ratings were recorded using a five-point scale: 1 = Not Important; 2 = Marginally Important; 3 = Moderately Important; 4 = Important; and 5 = Critically Important. Average importance ratings were calculated by including all importance ratings regardless of practice setting. The SME panel ratings and survey respondent ratings of the 116 knowledge statements yielded very similar results.

Table 5. Most and Least Important Knowledge Statements

Most Important Knowledge Statements

Newly Licensed LPN/VNs		LPN/VN Educators		LPN/VN Supervisors		SMEs	
	Average		Average		Average		Average
Knowledge of:	1-5 scale	Knowledge of:	1-5 scale	Knowledge of:	1-5 scale	Knowledge of:	1-5 scale
vital signs	4.76	how to correctly identify client	4.89	vital signs	4.81	how to correctly identify client	5.00
aseptic and sterile techniques	4.75	rights of medication administration	4.88	critical signs and symptoms	4.78	vital signs	4.83
signs and symptoms of allergic reaction	4.75	vital signs	4.88	rights of medication administration	4.77	critical signs and symptoms	4.83
critical signs and symptoms	4.73	aseptic and sterile techniques	4.85	aseptic and sterile techniques	4.74	infection control	4.83
infection control	4.72	confidentiality	4.84	standard/ universal precautions	4.72	rights of medication administration	4.83

Least Important Knowledge Statements

Newly Licensed LPN/VNs		LPN/VN Educators		LPN/VN Supervisors		SMEs	
	Average		Average		Average		Average
Knowledge of:	1-5 scale	Knowledge of:	1-5 scale	Knowledge of:	1-5 scale	Knowledge of:	1-5 scale
insurance requirements	3.15	insurance requirements	2.71	insurance requirements	2.64	insurance requirements	1.83
inventory control	3.26	inventory control	2.74	inventory control	2.74	inventory control	2.67
alternative/ complementary therapy	3.31	fetal monitoring	3.08	fetal monitoring	2.85	alternative/ complementary therapy	2.67
referral process	3.47	fiscal responsibility	3.08	alternative/ complementary therapy	2.97	community resources	2.67
learning styles	3.48	alternative/ complementary therapy	3.14	stages of labor	3.07	fiscal responsibility	2.83

The five least important and the five most important knowledge statements for all primary job titles are shown in Table 5. All primary job titles (Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors) rated vital signs, and aseptic and sterile techniques among the five most important knowledge statements. In terms of the least important knowledge statements, all primary job titles (including SMEs) rated insurance requirements, inventory control as the two least important, with alternative/ complementary therapy also among the five least important knowledge statements.

The average importance ratings sorted by primary job title (Newly Licensed LPN/VN, LPN/VN Educator and LPN/VN Supervisor) for all of the knowledge statements are presented in Table 6. Additionally, Appendices E, F and G present the information in rank order of importance for each of the primary job titles as compared to ratings of SMEs.

Table 6. Knowledge Statement Importance Ratings

Survey position #	Knowledge of:	Newly Licensed LPN/VNs			LPN/VN Educator			LPN/VN Supervisor		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
1	accepted medical/nursing abbreviations	516	4.11	0.04	818	4.46	0.02	242	4.43	0.05
2	admission process	516	3.82	0.04	814	3.60	0.03	241	3.76	0.07
3	advance directives	513	4.08	0.04	812	4.06	0.03	242	4.09	0.06
4	alternative/ complementary therapy	507	3.31	0.04	809	3.14	0.03	239	2.97	0.06
5	anatomy/physiology	516	4.37	0.03	811	4.57	0.02	242	4.57	0.04
6	client goals/outcomes	514	4.17	0.04	816	4.24	0.02	241	4.14	0.05
7	aseptic and sterile techniques	510	4.75	0.02	814	4.85	0.02	243	4.74	0.03
8	assessment equipment	515	4.17	0.03	812	4.24	0.03	243	4.15	0.05
9	assistive resources (e.g., staff or equipment)	517	3.96	0.04	809	3.92	0.03	240	3.89	0.05
10	basic cardiac rhythms	515	3.96	0.04	814	3.44	0.03	241	3.50	0.07
11	body mechanics	513	4.17	0.04	814	4.54	0.02	240	4.37	0.05
12	care planning process	517	3.81	0.04	814	3.90	0.03	243	3.83	0.05
13	chain of command	516	3.78	0.04	814	4.20	0.03	243	4.01	0.05
14	chart review	513	4.04	0.04	815	3.55	0.03	243	3.59	0.06
15	client abilities	512	4.07	0.03	812	4.22	0.02	242	3.96	0.05
16	client compliance	517	4.07	0.04	816	4.01	0.03	243	3.91	0.05
17	client condition	515	4.49	0.03	818	4.59	0.02	242	4.43	0.05
18	client consent	515	4.47	0.03	815	4.54	0.02	243	4.35	0.05
19	client diagnosis/prognosis	515	4.49	0.03	812	4.44	0.02	243	4.35	0.04
20	client education	516	4.25	0.03	815	4.29	0.03	243	4.19	0.05
21	how to correctly identify client	517	4.66	0.03	808	4.89	0.01	242	4.71	0.04
22	client medical history	517	4.29	0.03	813	4.20	0.02	242	4.13	0.04
23	client medical records	515	4.07	0.04	813	3.86	0.03	242	3.97	0.05
24	client positioning	516	4.22	0.03	814	4.48	0.02	242	4.38	0.04
25	client rights	510	4.44	0.03	814	4.66	0.02	241	4.50	0.04
26	communication barriers (e.g., hearing or language)	512	4.16	0.03	818	4.34	0.02	242	4.23	0.05
27	communication techniques	517	4.1	0.03	813	4.33	0.02	240	4.17	0.05
28	community resources	517	3.65	0.04	813	3.55	0.03	240	3.39	0.06
29	confidentiality	513	4.64	0.03	815	4.84	0.02	242	4.68	0.04
30	conflict resolution	517	4.06	0.03	814	3.99	0.03	243	4.05	0.05
31	continuing education needs/opportunities	514	4.05	0.04	816	3.80	0.03	242	3.79	0.05
32	continuity of care	516	4.15	0.03	814	4.07	0.03	243	4.13	0.05
33	coordination of care	514	4.14	0.03	812	3.97	0.03	242	4.05	0.05
34	coping mechanisms	515	4.02	0.03	810	4.01	0.03	242	3.96	0.06
35	critical signs and symptoms	514	4.73	0.02	815	4.78	0.02	241	4.78	0.03

Table 6. Knowledge Statement Importance Ratings

Survey position #	Knowledge of:	Newly Licensed LPN/VNs			LPN/VN Educator			LPN/VN Supervisor		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
36	cultural/religious beliefs or practices	516	3.87	0.04	817	3.93	0.03	243	3.71	0.05
37	information technology	517	3.67	0.04	814	3.73	0.03	240	3.77	0.05
38	data collection and analysis	516	4.13	0.04	817	4.11	0.03	243	3.68	0.06
39	disease processes	516	4.34	0.03	814	4.42	0.02	242	4.38	0.04
40	hazardous/ biohazardous material	515	4.23	0.04	816	4.22	0.03	242	4.05	0.05
41	documentation	516	4.65	0.03	813	4.70	0.02	242	4.72	0.03
42	drug calculations	516	4.59	0.03	818	4.82	0.02	243	4.44	0.05
43	drug classifications	513	4.3	0.04	814	4.42	0.02	243	4.34	0.05
44	drug interactions	516	4.54	0.03	817	4.48	0.02	243	4.51	0.04
45	emergency procedures/ equipment	516	4.63	0.03	815	4.52	0.02	242	4.58	0.04
46	enteral tubes	515	4.12	0.04	815	4.09	0.02	241	4.11	0.05
47	environment	516	3.71	0.04	810	3.79	0.03	242	3.64	0.06
48	error/occurrence reporting	515	4.22	0.04	817	4.14	0.03	239	4.14	0.06
49	evaluation techniques	513	3.98	0.04	809	3.98	0.03	242	3.67	0.06
50	evidence-based practice	514	3.82	0.04	813	3.93	0.03	242	3.80	0.06
51	facility policy	516	4.03	0.04	811	4.18	0.03	240	4.09	0.06
52	facility resources	513	3.92	0.04	812	3.82	0.03	241	3.79	0.05
53	feeding equipment/pumps	515	4.15	0.04	806	4.03	0.03	240	4.07	0.05
54	fetal monitoring	513	3.93	0.05	814	3.08	0.04	238	2.85	0.09
55	fiscal responsibility	513	3.50	0.05	815	3.08	0.03	240	3.10	0.07
56	generic drug names	514	4.23	0.04	813	4.15	0.03	242	4.17	0.05
57	hazardous conditions	517	4.29	0.04	814	4.24	0.03	241	4.08	0.05
58	high risk behaviors	516	4.36	0.03	817	4.23	0.03	242	4.22	0.05
59	Health Insurance Portability and Accountability Act (HIPAA)	517	4.38	0.04	817	4.57	0.02	243	4.34	0.06
60	human growth and development	516	3.84	0.04	815	4.02	0.03	243	3.70	0.06
61	immobilizing equipment	516	3.74	0.04	811	3.69	0.03	243	3.56	0.05
62	immunization types and recommendations	515	3.90	0.04	814	3.63	0.03	243	3.54	0.06
63	infection control	511	4.72	0.02	811	4.79	0.02	240	4.69	0.04
64	insurance requirements	515	3.15	0.05	813	2.71	0.04	242	2.64	0.07
65	intake/output	516	4.22	0.04	813	4.54	0.02	243	4.32	0.05
66	interdisciplinary team and process	516	3.67	0.04	816	3.69	0.03	241	3.88	0.06
67	inventory control	513	3.26	0.05	808	2.74	0.04	239	2.74	0.06
68	irrigation procedures	517	4.02	0.04	814	3.94	0.03	243	3.86	0.06
69	isolation equipment/ supplies	515	4.26	0.04	813	4.44	0.02	243	4.35	0.05
70	lab values	514	4.43	0.03	809	4.34	0.03	243	4.21	0.05

Table 6. Knowledge Statement Importance Ratings

Survey position #	Knowledge of:	Newly Licensed LPN/VNs			LPN/VN Educator			LPN/VN Supervisor		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
71	leadership and management skills	515	3.83	0.04	810	3.58	0.03	241	3.51	0.06
72	learning styles	516	3.48	0.05	814	3.32	0.03	241	3.27	0.06
73	client level of acuity	515	3.97	0.04	814	3.90	0.03	241	3.87	0.06
74	location of Material Safety Data Sheets (MSDS)	516	3.77	0.04	814	3.64	0.04	242	3.60	0.06
75	medication reconciliation	513	4.19	0.04	807	4.12	0.03	241	4.23	0.06
76	nasogastric (NG) procedure	515	4.09	0.04	818	4.08	0.03	242	3.88	0.06
77	nutrition	516	4.17	0.04	818	4.18	0.02	243	4.10	0.05
78	pain management	517	4.56	0.03	818	4.66	0.02	242	4.64	0.03
79	pain scales	516	4.39	0.03	818	4.56	0.02	242	4.51	0.04
80	patient bill of rights	514	4.25	0.03	817	4.37	0.03	243	4.26	0.05
81	personal limitations of the nurse	512	4.28	0.04	817	4.37	0.03	240	4.24	0.06
82	client privacy	516	4.48	0.03	817	4.65	0.02	243	4.50	0.04
83	personal protective equipment	514	4.49	0.03	815	4.65	0.02	242	4.47	0.04
84	pharmacology	513	4.42	0.03	814	4.58	0.02	242	4.33	0.05
85	physical inspection and data collection	515	4.37	0.03	816	4.50	0.02	241	4.17	0.05
86	pressure reduction (e.g., prevention or treatment of pressure ulcer)	515	4.50	0.03	815	4.55	0.02	241	4.63	0.04
87	procedure for processing orders (e.g., verbal, written or telephone)	516	4.43	0.03	816	4.17	0.03	241	4.32	0.06
88	proper use and maintenance of equipment	513	4.07	0.03	815	3.88	0.03	243	3.93	0.05
89	psychosocial dynamics	515	3.76	0.04	811	3.81	0.03	243	3.73	0.05
90	referral process	512	3.47	0.05	809	3.31	0.03	242	3.12	0.06
91	removal procedures (e.g., peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter)	511	4.30	0.04	814	4.35	0.03	242	4.17	0.06
92	reporting agencies	512	3.66	0.04	814	3.51	0.03	243	3.53	0.06
93	restraints (e.g., chemical or physical)	513	3.97	0.04	814	4.31	0.03	243	4.23	0.05
94	bowel/bladder retraining program	516	3.94	0.04	815	3.89	0.03	242	3.91	0.06
95	rights of medication administration	517	4.67	0.03	812	4.88	0.01	243	4.77	0.03
96	risk factors for skin breakdown	516	4.49	0.03	815	4.59	0.02	242	4.65	0.04
97	rules of delegation/ assignment	515	4.00	0.04	815	4.03	0.03	241	3.90	0.06
98	safe hand-off/ reporting process	512	4.15	0.04	815	4.31	0.03	243	4.28	0.05

Table 6. Knowledge Statement Importance Ratings

Survey position #	Knowledge of:	Newly Licensed LPN/VNs			LPN/VN Educator			LPN/VN Supervisor		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
99	safety concerns	512	4.41	0.03	814	4.60	0.02	241	4.45	0.04
100	scope of practice	513	4.55	0.03	817	4.73	0.02	242	4.60	0.04
101	seclusion procedures	504	3.94	0.04	810	3.66	0.04	242	3.48	0.07
102	signs and symptoms of allergic reaction	516	4.75	0.02	815	4.76	0.02	243	4.70	0.03
103	signs and symptoms of communicable disease	512	4.69	0.02	815	4.51	0.02	242	4.51	0.05
104	signs and symptoms of intravenous (IV) line infiltration	515	4.55	0.03	816	4.62	0.02	242	4.54	0.05
105	skin integrity	515	4.46	0.03	812	4.57	0.02	239	4.57	0.04
106	sources of data (e.g., computer or client records)	515	3.95	0.04	813	3.87	0.03	242	3.69	0.06
107	specific medication names	516	4.25	0.04	813	4.26	0.03	241	4.22	0.05
108	specimen collection procedure	514	4.25	0.03	813	4.22	0.02	243	4.16	0.05
109	stages of labor	516	3.79	0.05	809	3.34	0.04	240	3.07	0.09
110	standard/universal precautions	514	4.64	0.03	816	4.83	0.02	239	4.72	0.04
111	substance abuse	513	3.95	0.04	811	3.92	0.03	239	3.77	0.07
112	traction equipment	515	3.66	0.05	813	3.50	0.03	240	3.31	0.07
113	trade names for medications	514	4.10	0.04	811	4.08	0.03	243	4.04	0.06
114	treatment options	513	4.08	0.04	814	3.79	0.03	242	3.78	0.05
115	vital signs	513	4.76	0.02	815	4.88	0.01	243	4.81	0.03
116	wound care	513	4.55	0.03	816	4.47	0.02	243	4.53	0.04

Knowledge Statement Subgroup Analysis

Primary Job Title

The average knowledge statement importance ratings of Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors were cross-analyzed for meaningful differences among these job titles. Appendix J presents a table with each knowledge statement's average value for each primary job title. The least important knowledge statement for Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors was insurance requirements, with an average value of 3.15, 2.71 and 2.64, respectively. The most important knowledge statement for Newly Licensed LPN/VNs and LPN/VN Supervisors was vital signs, with an average value of 4.76 and 4.81. LPN/VN Educators rated how to correctly identify clients as the most important knowledge statement, with an average value of 4.89. In general, there were few differences in importance ratings based upon job title.

Facility

The average importance ratings of the knowledge statements for responders from hospitals, long-term care facilities, community-based facilities and other facilities were cross-analyzed for meaningful differences. Responders who worked in all four types of facilities rated insurance requirements and inventory control as the least important knowledge statements; the average ratings for insurance requirements were 2.70, 2.96, 3.07 and 2.77 and the average ratings for inventory control were 2.80, 3.00, 3.06 and 2.94, respectively. The most important knowledge statement for responders working in long-term care, community-based and other facilities was vital signs, with average importance ratings of 4.80, 4.78 and 4.87. This knowledge statement was the third most important for responders working in hospitals, with an average rating of 4.85. The two most important knowledge statement for responders working in hospitals were aseptic and sterile techniques, and how to correctly identify clients, both with an average rating of 4.86; aseptic and sterile techniques was the second most important for responders working in community-based facilities and the third most important for responders working in other facilities. Average importance values for all knowledge statements by facility appear in Appendix K.

Laboratory Values

The importance of memorizing specific normal laboratory values with regard to the safe and effective practice of newly-licensed LPN/VNs was determined by participants' yes or no responses to each laboratory value listed in the survey. The percentage of responders answering yes to each of the 30 laboratory values appears in Appendix H in survey order and can also be found ranked by percentage answering yes in Appendix I and in Table 7.

Laboratory Value Subgroup Analysis

Primary Job Title

The percentages of responders answering yes to the importance of memorizing the laboratory values listed in the survey were cross-analyzed among Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors. Of those lowest values, 39.7% of Newly Licensed LPN/VNs answered that newly-licensed nurses needed to know normal lab value for AST (SGOT). There were 17.3% of LPN/VN Educators and 13.6% of LPN/VN Supervisors who answered that newly-licensed nurses needed to remember normal lab value for phosphorus/phosphate. In terms of highest percentage answering yes to memorizing lab values, 95.8% of Newly Licensed LPN/VNs, 96.3% of LPN/VN Educators and 91.4% of LPN/VN Supervisors answered yes to normal lab value for glucose. A table including all average ratings for laboratory values by primary job titles can be found in Appendix L.

Facility

The need to memorize laboratory values based upon responder answers to the facility demographic was cross-analyzed for possible meaningful differences among the facility settings: hospital, long-term care facility, community-based facility and other. Every facility subgroup answered normal lab value for phosphorus/phosphate as the lowest value

Table 7. Laboratory Value Findings

Lab Values		N	%
Lab26	Normal lab value for phosphorus/ phosphate	1572	25.4
Lab16	Normal lab value for AST (SGOT)	1571	28.6
Lab14	Normal lab value for ALT (SGPT)	1572	28.8
Lab22	Normal lab value for ESR	1566	29.8
Lab15	Normal lab value for ammonia	1575	31.5
Lab27	Normal lab value for protein (total)	1566	33.5
Lab23	Normal lab value for lithium	1574	37.2
Lab17	Normal lab value for bilirubin	1574	37.5
Lab13	Normal lab value for albumin (blood)	1568	38.7
Lab24	Normal lab value for magnesium	1571	41.2
Lab19	Normal lab value for cholesterol (HDL and LDL)	1571	51.0
Lab29	Normal lab value for urine (alb, pH, white blood cell count [WBC] and %T lymphocytes [differential])	1573	53.5
Lab3	Normal lab value for cholesterol (total)	1569	53.7
Lab2	Normal lab value for arterial blood gases (pH_1, PO_2, PCO_2, SaO_2, HCO_3)	1578	56.8
Lab7	Normal lab value for hemoglobin A1C (HbA_1C)	1574	60.7
Lab20	Normal lab value for creatinine	1574	67.0
Lab18	Normal lab value for bleeding time	1577	69.1
Lab25	Normal lab value for PTT and APTT	1578	70.5
Lab21	Normal lab value for digoxin	1571	72.3
Lab10	Normal lab value for red blood count (RBC)	1577	72.5
Lab8	Normal lab value for platelets	1567	72.8
Lab30	Normal lab value for International Normalized Ratio (INR)	1578	75.5
Lab1	Normal lab value for BUN (blood, urea, nitrogen)	1581	76.9
Lab28	Normal lab value for prothrombin time (PT)	1575	78.3
Lab11	Normal lab value for sodium (Na^+)	1580	84.4
Lab5	Normal lab value for hematocrit (Hct)	1583	88.1
Lab6	Normal lab value for hemoglobin (Hgb)	1581	90.1
Lab12	Normal lab value for white blood count (WBC)	1583	90.5
Lab9	Normal lab value for potassium (K^+)	1582	91.8
Lab4	Normal lab value for glucose	1584	95.4

percentage, with percentages of 19.0% (hospital), 30.1% (long-term care), 32.0% (community-based facility) and 25.3% (other). Memorizing normal lab value for glucose was answered most often among all four facilities with percentages of 95.8% (hospital), 94.3% (long-term care), 96.1% (community-based facility) and 96.6% (other). A table including all average values for the facility subgroup analysis can be found in Appendix M.

Summary

Responders to the 2009 LPN/VNs Nursing Knowledge Survey found the statements listed in the survey to be representative of the knowledge necessary for safe and effective professional practice of newly-licensed LPN/VNs. In terms of importance of certain laboratory values to commit to memory, some discrepancies were found among ratings of Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors. There were similar importance ratings of the knowledge statements for Newly Licensed LPN/VNs, LPN/VN Educators, LPN/VN Supervisors and SMEs.

CONCLUSIONS

Based upon the reliability of the knowledge statement instrument, the survey of nonresponders, the validation of the knowledge statement importance ratings by SMEs, and the similarity of knowledge statement importance ratings by Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors, as well as the rigorous processed used for survey development, the results of this survey can be used to inform item development.

REFERENCES

American Educational Research Association, American Psychological Association and National Council on Measurement in Education. (1999). Standards for educational and psychological testing. Washington, DC: American Educational Research Association.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.

ADDITIONAL RESOURCES

Wendt, A. (2007) *Report of findings from the 2006 LPN/VN practice analysis: Linking the NCLEX-PN® Examination to practice.* Chicago: NCSBN.

Wendt, A., Kenny, L., & Stasko, J. (2008). *2008 NCLEX-PN® detailed test plan.* Chicago: NCSBN.

APPENDIX A: 2009 LPN/VN NURSING KNOWLEDGE SURVEY METHODOLOGY REVIEWERS

Deirdre Knapp, PhD, is the director of the Assessment, Training, and Policy Studies Division at the Human Resources Research Organization (HumRRO). She also serves as vice president of the organization. Knapp has over 25 years of experience in conducting and managing personnel and testing related research. Her research emphasis is on designing and administering performance assessments. In that capacity, Knapp is a leader in the field of job analyses and practice analyses. Prior to her 20 years of service in HumRRO, she worked as a research psychologist at the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI).

Ira Bernstein, PhD, is a professor in the Department of Clinical Sciences at the University of Texas Southwestern Medical Center. He also holds joint appointments at the University of Texas School of Health Professions and at the University of Texas at Arlington. For the last 10 years, Dr. Bernstein has served as consulting editor for a number of peer review journals, such as *Behavior Research Methods* and *Educational and Psychological Measurements*. Bernstein is an expert in the field of measurement and psychometric. He is one of the researchers funded by the NCSBN Joint Research Committee (JRC) in 2009.

Michael Rosenfeld, PhD, is president of Rosenfeld and Associates. His recent research focused on the development of job analysis procedures as a basis for designing assessment measures, documenting their validity and using the results of job analysis in curriculum design. Throughout his 30 plus years of experience in the testing industry, he has worked on many important testing issues, such as the Americans with Disabilities Act (ADA). Rosenfeld is a lead auditor for the American National Standards Institute in their program accrediting credentialing organizations. He also serves as co-editor of *CLEAR Exam Review,* a professional testing journal. Prior to his work with Rosenfeld and Associates, Rosenfeld conducted and managed a wide variety of applied research projects for both the American Institutes for Research (AIR) and Educational Testing Service (ETS).

APPENDIX B: SUBJECT MATTER EXPERT PANEL FOR THE 2009 LPN/VN NURSING KNOWLEDGE SURVEY

Area I

Member: Tammy Talley, LPN
Executive Director
Riverside Health Care Center

Board: Montana State Board of Nursing

Specialty: Long-Term Care Nursing

Talley has worked for 20 years in practical nursing with experience in physician's clinics and long-term care. She oversees a 72-bed facility operation, including staffing, budgets, communicating with residents and family members, as well as communications with physicians. She is responsible for Quality Assurance/ Continuous Quality Improvement, Occupational Safety and Health Administration regulations, workman's compensation, safety committee, staff education and survey compliance issues. As administrator of her facility, Talley is also involved in the hiring and selection of new staff. She pairs new nurses with nurses of similar interests and backgrounds, and personally meets with each new nurse weekly to oversee their orientation.

Member: Mary Banayat, RN
Faculty

Board: Arizona State Board of Nursing

Specialty: Faculty

Banayat has more than five years of nursing experience, with practical nursing experience in telemetry and med/surg. She currently teaches in an LPN/VN program and has experience orienting and precepting new LPN/VNs.

Area II

Member: Margaret Birkholz, LPN
Clinical Nursing Supervisor
Altru Health System

Board: North Dakota Board of Nursing

Specialty: Med/Surg Nursing

Birkholz has 25 years of practical nursing experience in family practice. She supervises LPN/VNs in obstetrics, pediatrics, psychiatric, internal medicine and anesthetics departments. She was a member of the North Dakota Board of Nursing Practice Subcommittee (2006-2008) and a past member of Utilization Research and Review Committees. In her current role, she participates in the orientation and mentoring of new nurses to the organization.

Area III

Member: Tina Nicholson, RN
Charge Nurse
St. Vincent's Birmingham

Board: Alabama Board of Nursing

Specialty: Med/Surg/Telemetry Nursing

Nicholson has seven years of nursing experience as a charge nurse on a med/surg/telemetry unit. She also has experience in orthopedics and neurology. Additionally, she is involved with the orientation process of newly-licensed LPN/VNs and serves as a preceptor on her unit.

Member: Sandra Foss, RN
Unit Supervisor
South Austin Hospital

Board: Texas Board of Nursing

Specialty: Med/Surg Nursing

Foss has 40 years of nursing experience as a unit supervisor on a med/surg unit. She works with entry level LPN/VNs and provides direct care to orthopedic/neurology patients, as well as oncology and pediatric patients.

Member: Deborah Murray, RN
Director of Clinical Services
Growing Child Pediatrics

Board: North Carolina Board of Nursing

Specialty: Pediatric Health Nursing

Murray has 11 years of nursing experience in pediatric health. She oversees staffing at multiple locations for a large pediatric practice in North Carolina and coordinates internships with several area LPN/VN schools.

Member: Felicia Whitaker, LPN
Staff
LSU Health Services Center

Board: Louisiana-PN Board of Nursing

Specialty: Psychiatric Nursing

Whitaker is a new LPN/VN graduate with practical nursing experience in psychiatric and long-term care.

Area IV

Member: Melanie Terrano, LPN
Charge Nurse
Windsor County Corrections

Board: Vermont Board of Nursing

Specialty: Geriatrics, Corrections Nursing

Terrano is a new LPN/VN graduate with practical nursing experience in med/surg, triage, geriatrics and corrections.

Member: Christine Naas, LPN
Staff
Southern New Hampshire Medical Center

Board: New Hampshire Board of Nursing

Specialty: Acute Care

Naas has over 25 years of nursing experience with clinical experience in acute care, critical care/ICU, pre-op, med/surg, psychiatrics and pediatrics. She serves as a member of the Southern New Hampshire Medical Center Ethics Committee and is a board of nursing liaison to the Practice and Education Committee.

APPENDIX C: 2009 LPN/VN NURSING KNOWLEDGE SURVEY

NATIONAL COUNCIL OF STATE BOARDS OF NURSING (NCSBN®)
LICENSED PRACTICAL/VOCATIONAL NURSE (LPN/VN)
NURSING KNOWLEDGE SURVEY

This survey is part of a study of the knowledge of newly licensed practical/vocational nurses (LPN/VNs) in the U.S. and its territories. [In this survey, territories of the U.S. include American Samoa, Guam, Northern Mariana Islands and the U.S. Virgin Islands.] The study is being performed by NCSBN on behalf of your board of nursing. Please complete and return this form as soon as possible. This is your opportunity to contribute to the development of the NCLEX-PN® examination that future candidates will take.

INSTRUCTIONS

Please read each question carefully and respond by filling in the oval of the response that most closely represents your answer. When asked to write in information, print your answer legibly in the space provided.

As used in this survey, the **"client"** can be an individual, family or significant other. "Clients" are the same as "residents" or "patients." Your answers will be kept confidential and your individual responses to the questions will not be released.

MARKING INSTRUCTIONS:

- **Use a pencil.**
- Do not use pen.
- Make heavy dark marks that fill the oval completely.
- If you want to change an answer, erase completely.

1. What type(s) of nursing license do you hold? **(Select ALL that apply)**
   - ○ Licensed Practical Nurse/Vocational Nurse (LPN/VN)
   - ○ Registered Nurse (RN)

2. I am primarily: **(Select only one)**
   - ○ Newly Licensed LPN/VN
   - ○ LPN/VN Nurse Educator
   - ○ LPN/VN Nurse Supervisor

3. How long have you been in the position you selected in question 2? (For newly licensed LPN/VNs—how long since you graduated from your nursing program?)

Years	Months
0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9

continued →

PLEASE DO NOT WRITE IN THIS AREA

SECTION 1: KNOWLEDGE STATEMENTS

This section contains a list of knowledge statements applicable to nursing practice in a variety of settings. For each knowledge statement, please mark the degree of importance, whether or not it applies to your practice setting. For each knowledge statement, one question is asked:

Question - Importance: How important is the possession of this knowledge by a newly licensed LPN/VN for safe and effective professional practice, regardless of specific practice setting? (Select one) 1 = Not Important, 2 = Marginally Important, 3 = Moderately Important, 4 = Important and 5 = Critically Important	**Importance**				
Knowledge of:	1 = Not Important	2 = Marginally Important	3 = Moderately Important	4 = Important	5 = Critically Important
1. accepted medical/nursing abbreviations	①	②	③	④	⑤
2. admission process	①	②	③	④	⑤
3. advance directives	①	②	③	④	⑤
4. alternative/complementary therapy	①	②	③	④	⑤
5. anatomy/physiology	①	②	③	④	⑤
6. client goals/outcomes	①	②	③	④	⑤
7. aseptic and sterile techniques	①	②	③	④	⑤
8. assessment equipment	①	②	③	④	⑤
9. assistive resources (e.g., staff or equipment)	①	②	③	④	⑤
10. basic cardiac rhythms	①	②	③	④	⑤
11. body mechanics	①	②	③	④	⑤
12. care planning process	①	②	③	④	⑤
13. chain of command	①	②	③	④	⑤
14. chart review	①	②	③	④	⑤
15. client abilities	①	②	③	④	⑤
16. client compliance	①	②	③	④	⑤
17. client condition	①	②	③	④	⑤
18. client consent	①	②	③	④	⑤
19. client diagnosis/prognosis	①	②	③	④	⑤
20. client education	①	②	③	④	⑤
21. how to correctly identify client	①	②	③	④	⑤
22. client medical history	①	②	③	④	⑤
23. client medical records	①	②	③	④	⑤
24. client positioning	①	②	③	④	⑤
25. client rights	①	②	③	④	⑤
26. communication barriers (e.g., hearing or language)	①	②	③	④	⑤
27. communication techniques	①	②	③	④	⑤
28. community resources	①	②	③	④	⑤
29. confidentiality	①	②	③	④	⑤
30. conflict resolution	①	②	③	④	⑤
31. continuing education needs/opportunities	①	②	③	④	⑤
32. continuity of care	①	②	③	④	⑤
33. coordination of care	①	②	③	④	⑤
34. coping mechanisms	①	②	③	④	⑤
35. critical signs and symptoms	①	②	③	④	⑤
36. cultural/religious beliefs or practices	①	②	③	④	⑤
37. information technology	①	②	③	④	⑤
38. data collection and analysis	①	②	③	④	⑤
39. disease processes	①	②	③	④	⑤
40. hazardous/biohazardous material	①	②	③	④	⑤
41. documentation	①	②	③	④	⑤
42. drug calculations	①	②	③	④	⑤
43. drug classifications	①	②	③	④	⑤
44. drug interactions	①	②	③	④	⑤
45. emergency procedures/equipment	①	②	③	④	⑤
46. enteral tubes	①	②	③	④	⑤
47. environment	①	②	③	④	⑤
48. error/occurrence reporting	①	②	③	④	⑤
49. evaluation techniques	①	②	③	④	⑤
50. evidence-based practice	①	②	③	④	⑤
51. facility policy	①	②	③	④	⑤
52. facility resources	①	②	③	④	⑤
53. feeding equipment/pumps	①	②	③	④	⑤
54. fetal monitoring	①	②	③	④	⑤
55. fiscal responsibility	①	②	③	④	⑤
56. generic drug names	①	②	③	④	⑤
57. hazardous conditions	①	②	③	④	⑤
58. high risk behaviors	①	②	③	④	⑤

continued →

SECTION 1: KNOWLEDGE STATEMENTS (CONTINUED)

Question - Importance: How important is the possession of this knowledge by a newly licensed LPN/VN for safe and effective professional practice, regardless of specific practice setting? (Select one) 1 = Not Important, 2 = Marginally Important, 3 = Moderately Important, 4 = Important and 5 = Critically Important	Importance				
Knowledge of:	1 = Not Important	2 = Marginally Important	3 = Moderately Important	4 = Important	5 = Critically Important
59. Health Insurance Portability and Accountability Act (HIPAA)	①	②	③	④	⑤
60. human growth and development	①	②	③	④	⑤
61. immobilizing equipment	①	②	③	④	⑤
62. immunization types and recommendations	①	②	③	④	⑤
63. infection control	①	②	③	④	⑤
64. insurance requirements	①	②	③	④	⑤
65. intake/output	①	②	③	④	⑤
66. interdisciplinary team and process	①	②	③	④	⑤
67. inventory control	①	②	③	④	⑤
68. irrigation procedures	①	②	③	④	⑤
69. isolation equipment/supplies	①	②	③	④	⑤
70. lab values	①	②	③	④	⑤
71. leadership and management skills	①	②	③	④	⑤
72. learning styles	①	②	③	④	⑤
73. client level of acuity	①	②	③	④	⑤
74. location of Material Safety Data Sheets (MSDS)	①	②	③	④	⑤
75. medication reconciliation	①	②	③	④	⑤
76. nasogastric (NG) procedure	①	②	③	④	⑤
77. nutrition	①	②	③	④	⑤
78. pain management	①	②	③	④	⑤
79. pain scales	①	②	③	④	⑤
80. patient bill of rights	①	②	③	④	⑤
81. personal limitations of the nurse	①	②	③	④	⑤
82. client privacy	①	②	③	④	⑤
83. personal protective equipment	①	②	③	④	⑤
84. pharmacology	①	②	③	④	⑤
85. physical inspection and data collection	①	②	③	④	⑤
86. pressure reduction (e.g., prevention or treatment of pressure ulcer)	①	②	③	④	⑤
87. procedure for processing orders (e.g., verbal, written or telephone)	①	②	③	④	⑤
88. proper use and maintenance of equipment	①	②	③	④	⑤
89. psychosocial dynamics	①	②	③	④	⑤
90. referral process	①	②	③	④	⑤
91. removal procedures (e.g., peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter)	①	②	③	④	⑤
92. reporting agencies	①	②	③	④	⑤
93. restraints (e.g., chemical or physical)	①	②	③	④	⑤
94. bowel/bladder retraining program	①	②	③	④	⑤
95. rights of medication administration	①	②	③	④	⑤
96. risk factors for skin breakdown	①	②	③	④	⑤
97. rules of delegation/assignment	①	②	③	④	⑤
98. safe hand-off/reporting process	①	②	③	④	⑤
99. safety concerns	①	②	③	④	⑤
100. scope of practice	①	②	③	④	⑤
101. seclusion procedures	①	②	③	④	⑤
102. signs and symptoms of allergic reaction	①	②	③	④	⑤
103. signs and symptoms of communicable disease	①	②	③	④	⑤
104. signs and symptoms of intravenous (IV) line infiltration	①	②	③	④	⑤
105. skin integrity	①	②	③	④	⑤
106. sources of data (e.g., computer or client records)	①	②	③	④	⑤
107. specific medication names	①	②	③	④	⑤
108. specimen collection procedure	①	②	③	④	⑤
109. stages of labor	①	②	③	④	⑤
110. standard/universal precautions	①	②	③	④	⑤
111. substance abuse	①	②	③	④	⑤
112. traction equipment	①	②	③	④	⑤
113. trade names for medications	①	②	③	④	⑤
114. treatment options	①	②	③	④	⑤
115. vital signs	①	②	③	④	⑤
116. wound care	①	②	③	④	⑤

continued →

PLEASE DO NOT WRITE IN THIS AREA

SECTION 1: KNOWLEDGE STATEMENTS (CONTINUED)

1. Is it important for the entry-level LPN/VN to memorize the following laboratory values?

○ Yes	○ No	Normal lab value for BUN (blood, urea, nitrogen)
○ Yes	○ No	Normal lab value for arterial blood gases (pH, PO_2, PCO_2, SaO_2, HCO_3)
○ Yes	○ No	Normal lab value for cholesterol (total)
○ Yes	○ No	Normal lab value for glucose
○ Yes	○ No	Normal lab value for hematocrit (Hct)
○ Yes	○ No	Normal lab value for hemoglobin (Hgb)
○ Yes	○ No	Normal lab value for hemoglobin A1C (HbA,C)
○ Yes	○ No	Normal lab value for platelets
○ Yes	○ No	Normal lab value for potassium (K^+)
○ Yes	○ No	Normal lab value for red blood count (RBC)
○ Yes	○ No	Normal lab value for sodium (Na^+)
○ Yes	○ No	Normal lab value for white blood count (WBC)
○ Yes	○ No	Normal lab value for albumin (blood)
○ Yes	○ No	Normal lab value for ALT (SGPT)
○ Yes	○ No	Normal lab value for ammonia
○ Yes	○ No	Normal lab value for AST (SGOT)
○ Yes	○ No	Normal lab value for bilirubin
○ Yes	○ No	Normal lab value for bleeding time
○ Yes	○ No	Normal lab value for cholesterol (HDL and LDL)
○ Yes	○ No	Normal lab value for creatinine
○ Yes	○ No	Normal lab value for digoxin
○ Yes	○ No	Normal lab value for ESR
○ Yes	○ No	Normal lab value for lithium
○ Yes	○ No	Normal lab value for magnesium
○ Yes	○ No	Normal lab value for PTT and APTT
○ Yes	○ No	Normal lab value for phosphorus/phosphate
○ Yes	○ No	Normal lab value for protein (total)
○ Yes	○ No	Normal lab value for prothrombin time (PT)
○ Yes	○ No	Normal lab value for urine (alb, pH, white blood cell count [WBC] and %T lymphocytes [differential])
○ Yes	○ No	Normal lab value for International Normalized Ratio (INR)

2. How well did this survey cover the important knowledge areas a newly licensed LPN/VN should possess, regardless of the practice setting?

○ Very well
○ Well
○ Adequately
○ Poorly

Please list any important knowledge areas you believe that a newly licensed LPN/VN should possess that are missing from this survey.

_____

_____

_____

_____

_____

_____

SECTION 2: WORK ENVIRONMENT

INSTRUCTIONS FOR *NEWLY LICENSED LPN/VNs:* Choose the following clinical setting or practice area that most accurately describes where you work.

INSTRUCTIONS FOR LPN/VN *NURSE EDUCATORS:* Choose the following clinical setting or practice area that most accurately describes where you supervise your students.

INSTRUCTIONS FOR LPN/VN *NURSE SUPERVISORS:* Choose the following clinical setting that most accurately describes the general population you supervise and/or the unit on which you work.

1. Which of the following best describes your area of practice? **(Select all that apply)**
   - ○ Well clients, possibly with minor illnesses
   - ○ OB (Maternity) clients
   - ○ Clients with stabilized chronic conditions
   - ○ Clients with unstabilized chronic conditions
   - ○ Clients with acute conditions, including clients with medical, surgical or critical conditions
   - ○ Clients at end of life
   - ○ Clients with behavioral/emotional conditions
   - ○ Other, please specify: _____

2. Which of the following best describes the ages of the majority of your clients? **(Select all that apply)**
   - ○ Newborns (less than 1 month)
   - ○ Infants/children (1 month-12 years)
   - ○ Adolescent (ages 13-18)
   - ○ Young Adult (ages 19-30)
   - ○ Adult (ages 31-64)
   - ○ Older Adult (65-85)
   - ○ Older Adult (85 years and older)

3. Which of the following choices best describes your employment setting/specialty area? If you work mainly in one setting, fill in the appropriate oval for that one setting. If you work in more than one setting, fill in the appropriate oval for all settings where you spend at least one-half of your time. **(Select no more than two answers)**
   - ○ Critical care (e.g., ICU, CCU, step-down units, pediatric/neonatal intensive care, emergency department, post-anesthesia recovery unit)
   - ○ Medical-surgical unit or any of its sub-specialties (e.g., oncology, orthopedics, neurology)
   - ○ Pediatrics
   - ○ Nursery
   - ○ Labor and delivery
   - ○ Postpartum unit
   - ○ Psychiatry or any of its sub-specialties (e.g., detox)
   - ○ Operating room, including outpatient surgery and surgicenters
   - ○ Assisted living
   - ○ Nursing home, skilled or intermediate care
   - ○ Other long-term care (e.g., residential care, developmental disability)
   - ○ Rehabilitation
   - ○ Subacute unit
   - ○ Transitional care unit
   - ○ Physician/dentist office
   - ○ Occupational health
   - ○ Outpatient clinic
   - ○ Home health, including visiting nurses associations
   - ○ Public health
   - ○ Student/school health
   - ○ Hospice care
   - ○ Prison/correctional facility/jail
   - ○ Other, please specify: _____

4. Which of the following best describes the type of facility/organization where your employment setting/specialty area is located? **(Select only one)**
   - ○ Hospital
   - ○ Long-term care
   - ○ Community-based or ambulatory care facility/organization (including public health department, visiting nurses association, home health, physician/dentist office, clinic, school, prison, etc.)
   - ○ Other, please specify: _____

continued →

SECTION 3: DEMOGRAPHIC INFORMATION

1. What is your gender?
   - ○ Male
   - ○ Female

2. What is your age in years? Years

3. Which of the following is most descriptive of your racial/ethnic background? **(Select ONE answer)**
   - ○ African American
   - ○ Asian Indian
   - ○ Asian Other
   - ○ Hispanic
   - ○ Native American
   - ○ Pacific Islander
   - ○ White - not of Hispanic origin
   - ○ Other (please specify) _____

4. What is your primary language?
   - ○ English
   - ○ English and another language
   - ○ Another language

5. What is the highest degree completed that led to your current position?
   - ○ LPN/VN – Diploma/certificate in the U.S.
   - ○ LPN/VN – Associate degree in the U.S.
   - ○ RN - Diploma in the U.S.
   - ○ RN - Associate degree in the U.S.
   - ○ RN - Baccalaureate degree in the U.S.
   - ○ RN - Generic masters degree in the U.S.
   - ○ RN - Masters (Nurse Practitioner)
   - ○ RN - Masters (Clinical Nurse Specialist)
   - ○ RN - Generic doctorate in the U.S. (e.g., ND or PhD)
   - ○ Any nursing program NOT located in the U.S.
   - ○ Other program (please specify): _____

SECTION 4: COMMENTS

If we need additional information in order to clarify the results of this study, we may call and/or e-mail some participants. If you would be willing to answer a few additional questions by phone or e-mail, please provide a number where you can be reached during the day or early evening.

Name: _____

E-mail address: _____

Daytime or Early Evening Phone Number with Area Code:

( ) +

THANK YOU FOR PARTICIPATING IN THIS IMPORTANT STUDY.

Page 6

PLEASE DO NOT WRITE IN THIS AREA

APPENDIX D: SME KNOWLEDGE STATEMENT RATINGS RANK ORDERED BY AVERAGE IMPORTANCE

Preface: How important is the possession of this knowledge by a newly-licensed LPN/VN for safe and effective professional practice, regardless of specific practice setting?

Table D. SME Knowledge Statement Ratings Rank Ordered by Average Importance

Survey position #	Knowledge statements	SME ratings		
		N	Avg	Std. Err.
64	insurance requirements	6	1.83	0.31
4	alternative/complementary therapy	6	2.67	0.42
28	community resources	6	2.67	0.33
67	inventory control	6	2.67	0.42
10	basic cardiac rhythms	6	2.83	0.31
14	chart review	6	2.83	0.48
55	fiscal responsibility	6	2.83	0.31
71	leadership and management skills	6	2.83	0.31
2	admission process	6	3.00	0.52
62	immunization types and recommendations	6	3.00	0.37
92	reporting agencies	6	3.00	0.26
106	sources of data (e.g., computer or client records)	6	3.00	0.26
12	care planning process	6	3.17	0.31
43	drug classifications	6	3.17	0.54
72	learning styles	6	3.17	0.31
31	continuing education needs/opportunities	6	3.33	0.33
47	environment	6	3.33	0.33
114	treatment options	6	3.33	0.21
52	facility resources	6	3.33	0.33
109	stages of labor	6	3.33	0.42
90	referral process	5	3.40	0.24
30	conflict resolution	6	3.50	0.34
37	information technology	6	3.50	0.43
49	evaluation techniques	6	3.50	0.34
54	fetal monitoring	6	3.50	0.34
66	interdisciplinary team and process	6	3.50	0.43
74	location of Material Safety Data Sheets (MSDS)	6	3.50	0.34
111	substance abuse	6	3.50	0.22
113	trade names for medications	6	3.50	0.43
6	client goals/outcomes	6	3.67	0.21
23	client medical records	6	3.67	0.33
34	coping mechanisms	6	3.67	0.21
36	cultural/religious beliefs or practices	6	3.67	0.33
68	irrigation procedures	6	3.67	0.33
89	psychosocial dynamics	6	3.67	0.21
91	removal procedures (e.g., peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter)	6	3.67	0.49

Table D. SME Knowledge Statement Ratings Rank Ordered by Average Importance				
Survey position #	Knowledge statements	SME ratings		
		N	Avg	Std. Err.
94	bowel/bladder retraining program	6	3.67	0.49
48	error/occurrence reporting	6	3.67	0.42
56	generic drug names	6	3.67	0.42
112	traction equipment	6	3.67	0.21
61	immobilizing equipment	5	3.80	0.37
13	chain of command	6	3.83	0.31
16	client compliance	6	3.83	0.17
50	evidence-based practice	6	3.83	0.17
76	nasogastric (NG) procedure	6	3.83	0.31
77	nutrition	6	3.83	0.31
97	rules of delegation/assignment	6	3.83	0.40
108	specimen collection procedure	6	3.83	0.17
9	assistive resources (e.g., staff or equipment)	6	3.83	0.31
20	client education	6	3.83	0.31
60	human growth and development	6	3.83	0.31
70	lab values	6	3.83	0.48
73	client level of acuity	6	3.83	0.48
88	proper use and maintenance of equipment	6	3.83	0.40
101	seclusion procedures	6	3.83	0.6
107	specific medication names	6	3.83	0.48
3	advance directives	6	4.00	0.26
15	client abilities	6	4.00	0.26
22	client medical history	6	4.00	0.37
26	communication barriers (e.g., hearing or language)	6	4.00	0.26
27	communication techniques	6	4.00	0.26
33	coordination of care	6	4.00	0.26
39	disease processes	6	4.00	0.26
40	hazardous/biohazardous material	6	4.00	0.37
46	enteral tubes	6	4.00	0.26
53	feeding equipment/pumps	6	4.00	0.26
75	medication reconciliation	6	4.00	0.37
93	restraints (e.g., chemical or physical)	6	4.00	0.37
8	assessment equipment	6	4.17	0.31
32	continuity of care	6	4.17	0.17
38	data collection and analysis	6	4.17	0.17
42	drug calculations	6	4.17	0.40
58	high risk behaviors	6	4.17	0.17
83	personal protective equipment	6	4.17	0.31
85	physical inspection and data collection	6	4.17	0.31
86	pressure reduction (e.g., prevention or treatment of pressure ulcer)	6	4.17	0.31
87	procedure for processing orders (e.g., verbal, written or telephone)	6	4.17	0.40

Table D. SME Knowledge Statement Ratings Rank Ordered by Average Importance				
Survey position #	Knowledge statements	SME ratings		
		N	Avg	Std. Err.
98	safe hand-off/reporting process	6	4.17	0.31
116	wound care	6	4.17	0.31
69	isolation equipment/supplies	5	4.20	0.37
24	client positioning	6	4.33	0.33
1	accepted medical/nursing abbreviations	6	4.33	0.42
5	anatomy/physiology	6	4.33	0.33
11	body mechanics	6	4.33	0.33
19	client diagnosis/prognosis	6	4.33	0.33
51	facility policy	6	4.33	0.21
57	hazardous conditions	6	4.33	0.21
65	intake/output	6	4.33	0.21
79	pain scales	6	4.33	0.21
105	skin integrity	6	4.33	0.21
41	documentation	6	4.50	0.22
59	Health Insurance Portability and Accountability Act (HIPAA)	6	4.50	0.22
80	patient bill of rights	6	4.50	0.22
82	client privacy	6	4.50	0.22
99	safety concerns	6	4.50	0.22
100	scope of practice	6	4.50	0.34
103	signs and symptoms of communicable disease	6	4.50	0.34
110	standard/universal precautions	6	4.50	0.22
7	aseptic and sterile techniques	6	4.67	0.21
18	client consent	6	4.67	0.21
29	confidentiality	6	4.67	0.21
44	drug interactions	6	4.67	0.21
45	emergency procedures/equipment	6	4.67	0.21
78	pain management	6	4.67	0.21
81	personal limitations of the nurse	6	4.67	0.21
84	pharmacology	6	4.67	0.21
96	risk factors for skin breakdown	6	4.67	0.21
102	signs and symptoms of allergic reaction	6	4.67	0.21
104	signs and symptoms of intravenous (IV) line infiltration	6	4.67	0.21
17	client condition	6	4.83	0.17
25	client rights	6	4.83	0.17
35	critical signs and symptoms	6	4.83	0.17
63	infection control	6	4.83	0.17
95	rights of medication administration	6	4.83	0.17
115	vital signs	6	4.83	0.17
21	how to correctly identify client	6	5.00	0.00

APPENDIX E: NEWLY LICENSED LPN/VN AND SME KNOWLEDGE STATEMENT RATINGS RANK ORDERED BY NEWLY LICENSED LPN/VN AVERAGE IMPORTANCE

Preface: How important is the possession of this knowledge by a newly-licensed LPN/VN for safe and effective professional practice, regardless of specific practice setting?

Table E. Newly Licensed LPN/VN and SME Knowledge Statement Ratings Rank Ordered by Newly Licensed LPN/VN Average Importance

Survey position #	Knowledge of:	Newly Licensed LPN/VNs			SMEs			Avg. Difference
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	
64	insurance requirements	515	3.15	0.05	6	1.83	0.31	1.31
67	inventory control	513	3.26	0.05	6	2.67	0.42	0.59
4	alternative/complementary therapy	507	3.31	0.04	6	2.67	0.42	0.64
90	referral process	512	3.47	0.05	5	3.40	0.24	0.07
72	learning styles	516	3.48	0.05	6	3.17	0.31	0.32
55	fiscal responsibility	513	3.50	0.05	6	2.83	0.31	0.67
28	community resources	517	3.65	0.04	6	2.67	0.33	0.98
92	reporting agencies	512	3.66	0.04	6	3.00	0.26	0.66
112	traction equipment	515	3.66	0.05	6	3.67	0.21	0.00
66	interdisciplinary team and process	516	3.67	0.04	6	3.5	0.43	0.17
37	information technology	517	3.67	0.04	6	3.5	0.43	0.17
47	environment	516	3.71	0.04	6	3.33	0.33	0.38
61	immobilizing equipment	516	3.74	0.04	5	3.80	0.37	-0.06
89	psychosocial dynamics	515	3.76	0.04	6	3.67	0.21	0.09
74	location of Material Safety Data Sheets (MSDS)	516	3.77	0.04	6	3.50	0.34	0.27
13	chain of command	516	3.78	0.04	6	3.83	0.31	-0.05
109	stages of labor	516	3.79	0.05	6	3.33	0.42	0.46
12	care planning process	517	3.81	0.04	6	3.17	0.31	0.64
50	evidence-based practice	514	3.82	0.04	6	3.83	0.17	-0.02
2	admission process	516	3.82	0.04	6	3.00	0.52	0.82
71	leadership and management skills	515	3.83	0.04	6	2.83	0.31	1.00
60	human growth and development	516	3.84	0.04	6	3.83	0.31	0.00
36	cultural/religious beliefs or practices	516	3.87	0.04	6	3.67	0.33	0.20
62	immunization types and recommendations	515	3.9	0.04	6	3.00	0.37	0.90
52	facility resources	513	3.92	0.04	6	3.33	0.33	0.59
54	fetal monitoring	513	3.93	0.05	6	3.50	0.34	0.43
101	seclusion procedures	504	3.94	0.04	6	3.83	0.6	0.11
94	bowel/bladder retraining program	516	3.94	0.04	6	3.67	0.49	0.28
111	substance abuse	513	3.95	0.04	6	3.50	0.22	0.45
106	sources of data (e.g., computer or client records)	515	3.95	0.04	6	3.00	0.26	0.95
9	assistive resources (e.g., staff or equipment)	517	3.96	0.04	6	3.83	0.31	0.12
10	basic cardiac rhythms	515	3.96	0.04	6	2.83	0.31	1.13
93	restraints (e.g., chemical or physical)	513	3.97	0.04	6	4.00	0.37	-0.03

Table E. Newly Licensed LPN/VN and SME Knowledge Statement Ratings Rank Ordered by Newly Licensed LPN/VN Average Importance

Survey position #	Knowledge of:	Newly Licensed LPN/VNs			SMEs			Avg. Difference
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	
73	client level of acuity	515	3.97	0.04	6	3.83	0.48	0.14
49	evaluation techniques	513	3.98	0.04	6	3.50	0.34	0.48
97	rules of delegation/assignment	515	4.00	0.04	6	3.83	0.40	0.17
68	irrigation procedures	517	4.02	0.04	6	3.67	0.33	0.35
34	coping mechanisms	515	4.02	0.03	6	3.67	0.21	0.35
51	facility policy	516	4.03	0.04	6	4.33	0.21	-0.30
14	chart review	513	4.04	0.04	6	2.83	0.48	1.21
31	continuing education needs/opportunities	514	4.05	0.04	6	3.33	0.33	0.72
30	conflict resolution	517	4.06	0.03	6	3.50	0.34	0.56
23	client medical records	515	4.07	0.04	6	3.67	0.33	0.40
88	proper use and maintenance of equipment	513	4.07	0.03	6	3.83	0.40	0.24
16	client compliance	517	4.07	0.04	6	3.83	0.17	0.24
15	client abilities	512	4.07	0.03	6	4.00	0.26	0.07
114	treatment options	513	4.08	0.04	6	3.33	0.21	0.74
3	advance directives	513	4.08	0.04	6	4.00	0.26	0.08
76	nasogastric (NG) procedure	515	4.09	0.04	6	3.83	0.31	0.25
113	trade names for medications	514	4.10	0.04	6	3.50	0.43	0.60
27	communication techniques	517	4.10	0.03	6	4.00	0.26	0.10
1	accepted medical/nursing abbreviations	516	4.11	0.04	6	4.33	0.42	-0.22
46	enteral tubes	515	4.12	0.04	6	4.00	0.26	0.12
38	data collection and analysis	516	4.13	0.04	6	4.17	0.17	-0.04
33	coordination of care	514	4.14	0.03	6	4.00	0.26	0.14
98	safe hand-off/reporting process	512	4.15	0.04	6	4.17	0.31	-0.02
32	continuity of care	516	4.15	0.03	6	4.17	0.17	-0.02
53	feeding equipment/pumps	515	4.15	0.04	6	4.00	0.26	0.15
26	communication barriers (e.g., hearing or language)	512	4.16	0.03	6	4.00	0.26	0.16
11	body mechanics	513	4.17	0.04	6	4.33	0.33	-0.17
6	client goals/outcomes	514	4.17	0.04	6	3.67	0.21	0.5
77	nutrition	516	4.17	0.04	6	3.83	0.31	0.34
8	assessment equipment	515	4.17	0.03	6	4.17	0.31	0.00
75	medication reconciliation	513	4.19	0.04	6	4.00	0.37	0.19
48	error/occurrence reporting	515	4.22	0.04	6	3.67	0.42	0.55
65	intake/output	516	4.22	0.04	6	4.33	0.21	-0.11
24	client positioning	516	4.22	0.03	6	4.33	0.33	-0.11
56	generic drug names	514	4.23	0.04	6	3.67	0.42	0.56
40	hazardous/biohazardous material	515	4.23	0.04	6	4.00	0.37	0.23
80	patient bill of rights	514	4.25	0.03	6	4.50	0.22	-0.25
20	client education	516	4.25	0.03	6	3.83	0.31	0.41
108	specimen collection procedure	514	4.25	0.03	6	3.83	0.17	0.42
107	specific medication names	516	4.25	0.04	6	3.83	0.48	0.42

Table E. Newly Licensed LPN/VN and SME Knowledge Statement Ratings Rank Ordered by Newly Licensed LPN/VN Average Importance

Survey position #	Knowledge of:	Newly Licensed LPN/VNs			SMEs			Avg. Difference
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	
69	isolation equipment/supplies	515	4.26	0.04	5	4.20	0.37	0.06
81	personal limitations of the nurse	512	4.28	0.04	6	4.67	0.21	-0.39
57	hazardous conditions	517	4.29	0.04	6	4.33	0.21	-0.04
22	client medical history	517	4.29	0.03	6	4.00	0.37	0.29
91	removal procedures (e.g., peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter)	511	4.30	0.04	6	3.67	0.49	0.63
43	drug classifications	513	4.30	0.04	6	3.17	0.54	1.14
39	disease processes	516	4.34	0.03	6	4.00	0.26	0.34
58	high risk behaviors	516	4.36	0.03	6	4.17	0.17	0.20
85	physical inspection and data collection	515	4.37	0.03	6	4.17	0.31	0.20
5	anatomy/physiology	516	4.37	0.03	6	4.33	0.33	0.04
59	Health Insurance Portability and Accountability Act (HIPAA)	517	4.38	0.04	6	4.50	0.22	-0.12
79	pain scales	516	4.39	0.03	6	4.33	0.21	0.06
99	safety concerns	512	4.41	0.03	6	4.50	0.22	-0.09
84	pharmacology	513	4.42	0.03	6	4.67	0.21	-0.25
87	procedure for processing orders (e.g., verbal, written or telephone)	516	4.43	0.03	6	4.17	0.40	0.26
70	lab values	514	4.43	0.03	6	3.83	0.48	0.59
25	client rights	510	4.44	0.03	6	4.83	0.17	-0.39
105	skin integrity	515	4.46	0.03	6	4.33	0.21	0.13
18	client consent	515	4.47	0.03	6	4.67	0.21	-0.19
82	client privacy	516	4.48	0.03	6	4.50	0.22	-0.02
83	personal protective equipment	514	4.49	0.03	6	4.17	0.31	0.32
17	client condition	515	4.49	0.03	6	4.83	0.17	-0.35
96	risk factors for skin breakdown	516	4.49	0.03	6	4.67	0.21	-0.18
19	client diagnosis/prognosis	515	4.49	0.03	6	4.33	0.33	0.16
86	pressure reduction (e.g., prevention or treatment of pressure ulcer)	515	4.50	0.03	6	4.17	0.31	0.33
44	drug interactions	516	4.54	0.03	6	4.67	0.21	-0.13
104	signs and symptoms of intravenous (IV) line infiltration	515	4.55	0.03	6	4.67	0.21	-0.12
100	scope of practice	513	4.55	0.03	6	4.50	0.34	0.05
116	wound care	513	4.55	0.03	6	4.17	0.31	0.38
78	pain management	517	4.56	0.03	6	4.67	0.21	-0.11
42	drug calculations	516	4.59	0.03	6	4.17	0.40	0.42
45	emergency procedures/equipment	516	4.63	0.03	6	4.67	0.21	-0.03
29	confidentiality	513	4.64	0.03	6	4.67	0.21	-0.03
110	standard/universal precautions	514	4.64	0.03	6	4.50	0.22	0.14
41	documentation	516	4.65	0.03	6	4.50	0.22	0.15
21	how to correctly identify client	517	4.66	0.03	6	5.00	0.00	-0.34

Table E. Newly Licensed LPN/VN and SME Knowledge Statement Ratings Rank Ordered by Newly Licensed LPN/VN Average Importance

Survey position #	Knowledge of:	Newly Licensed LPN/VNs			SMEs			Avg. Difference
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	
95	rights of medication administration	517	4.67	0.03	6	4.83	0.17	-0.17
103	signs and symptoms of communicable disease	512	4.69	0.02	6	4.50	0.34	0.19
63	infection control	511	4.72	0.02	6	4.83	0.17	-0.12
35	critical signs and symptoms	514	4.73	0.02	6	4.83	0.17	-0.10
102	signs and symptoms of allergic reaction	516	4.75	0.02	6	4.67	0.21	0.08
7	aseptic and sterile techniques	510	4.75	0.02	6	4.67	0.21	0.08
115	vital signs	513	4.76	0.02	6	4.83	0.17	-0.07

APPENDIX F: LPN/VN EDUCATORS AND SME KNOWLEDGE STATEMENT RATINGS RANK ORDERED BY LPN/VN EDUCATOR AVERAGE IMPORTANCE

Preface: How important is the possession of this knowledge by a newly-licensed LPN/VN for safe and effective professional practice, regardless of specific practice setting?

Table F. LPN/VN Educators and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Educator Average Importance

Survey position #	Knowledge of:	LPN/VN Educators			SMEs			Avg. Difference
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	
64	insurance requirements	813	2.71	0.04	6	1.83	0.31	0.87
67	inventory control	808	2.74	0.04	6	2.67	0.42	0.08
54	fetal monitoring	814	3.08	0.04	6	3.50	0.34	-0.42
55	fiscal responsibility	815	3.08	0.03	6	2.83	0.31	0.25
4	alternative/complementary therapy	809	3.14	0.03	6	2.67	0.42	0.48
90	referral process	809	3.31	0.03	5	3.40	0.24	-0.09
72	learning styles	814	3.32	0.03	6	3.17	0.31	0.15
109	stages of labor	809	3.34	0.04	6	3.33	0.42	0.01
10	basic cardiac rhythms	814	3.44	0.03	6	2.83	0.31	0.60
112	traction equipment	813	3.50	0.03	6	3.67	0.21	-0.17
92	reporting agencies	814	3.51	0.03	6	3.00	0.26	0.51
28	community resources	813	3.55	0.03	6	2.67	0.33	0.88
14	chart review	815	3.55	0.03	6	2.83	0.48	0.72
71	leadership and management skills	810	3.58	0.03	6	2.83	0.31	0.75
2	admission process	814	3.60	0.03	6	3.00	0.52	0.60
62	immunization types and recommendations	814	3.63	0.03	6	3.00	0.37	0.63
74	location of Material Safety Data Sheets (MSDS)	814	3.64	0.04	6	3.50	0.34	0.14
101	seclusion procedures	810	3.66	0.04	6	3.83	0.60	-0.18
66	interdisciplinary team and process	816	3.69	0.03	6	3.50	0.43	0.19
61	immobilizing equipment	811	3.69	0.03	5	3.80	0.37	-0.11
37	information technology	814	3.73	0.03	6	3.50	0.43	0.23
47	environment	810	3.79	0.03	6	3.33	0.33	0.46
114	treatment options	814	3.79	0.03	6	3.33	0.21	0.46
31	continuing education needs/opportunities	816	3.80	0.03	6	3.33	0.33	0.46
89	psychosocial dynamics	811	3.81	0.03	6	3.67	0.21	0.14
52	facility resources	812	3.82	0.03	6	3.33	0.33	0.49
23	client medical records	813	3.86	0.03	6	3.67	0.33	0.20
106	sources of data (e.g., computer or client records)	813	3.87	0.03	6	3.00	0.26	0.87
88	proper use and maintenance of equipment	815	3.88	0.03	6	3.83	0.40	0.05
94	bowel/bladder retraining program	815	3.89	0.03	6	3.67	0.49	0.23
73	client level of acuity	814	3.90	0.03	6	3.83	0.48	0.07
12	care planning process	814	3.90	0.03	6	3.17	0.31	0.74
9	assistive resources (e.g., staff or equipment)	809	3.92	0.03	6	3.83	0.31	0.08
111	substance abuse	811	3.92	0.03	6	3.50	0.22	0.42
50	evidence-based practice	813	3.93	0.03	6	3.83	0.17	0.09

Table F. LPN/VN Educators and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Educator Average Importance								
		LPN/VN Educators			SMEs			Avg. Difference
Survey position #	Knowledge of:	N	Avg.	Std. Err.	N	Avg.	Std. Err.	
36	cultural/religious beliefs or practices	817	3.93	0.03	6	3.67	0.33	0.26
68	irrigation procedures	814	3.94	0.03	6	3.67	0.33	0.27
33	coordination of care	812	3.97	0.03	6	4.00	0.26	-0.03
49	evaluation techniques	809	3.98	0.03	6	3.50	0.34	0.48
30	conflict resolution	814	3.99	0.03	6	3.50	0.34	0.49
16	client compliance	816	4.01	0.03	6	3.83	0.17	0.17
34	coping mechanisms	810	4.01	0.03	6	3.67	0.21	0.35
60	human growth and development	815	4.02	0.03	6	3.83	0.31	0.18
97	rules of delegation/assignment	815	4.03	0.03	6	3.83	0.40	0.20
53	feeding equipment/pumps	806	4.03	0.03	6	4.00	0.26	0.03
3	advance directives	812	4.06	0.03	6	4.00	0.26	0.06
32	continuity of care	814	4.07	0.03	6	4.17	0.17	-0.10
113	trade names for medications	811	4.08	0.03	6	3.50	0.43	0.58
76	nasogastric (NG) procedure	818	4.08	0.03	6	3.83	0.31	0.25
46	enteral tubes	815	4.09	0.02	6	4.00	0.26	0.09
38	data collection and analysis	817	4.11	0.03	6	4.17	0.17	-0.06
75	medication reconciliation	807	4.12	0.03	6	4.00	0.37	0.12
48	error/occurrence reporting	817	4.14	0.03	6	3.67	0.42	0.48
56	generic drug names	813	4.15	0.03	6	3.67	0.42	0.49
87	procedure for processing orders (e.g., verbal, written or telephone)	816	4.17	0.03	6	4.17	0.40	0.01
77	nutrition	818	4.18	0.02	6	3.83	0.31	0.35
51	facility policy	811	4.18	0.03	6	4.33	0.21	-0.15
13	chain of command	814	4.20	0.03	6	3.83	0.31	0.36
22	client medical history	813	4.20	0.02	6	4.00	0.37	0.20
40	hazardous/biohazardous material	816	4.22	0.03	6	4.00	0.37	0.22
108	specimen collection procedure	813	4.22	0.02	6	3.83	0.17	0.39
15	client abilities	812	4.22	0.02	6	4.00	0.26	0.22
58	high risk behaviors	817	4.23	0.03	6	4.17	0.17	0.06
6	client goals/outcomes	816	4.24	0.02	6	3.67	0.21	0.57
57	hazardous conditions	814	4.24	0.03	6	4.33	0.21	-0.09
8	assessment equipment	812	4.24	0.03	6	4.17	0.31	0.07
107	specific medication names	813	4.26	0.03	6	3.83	0.48	0.43
20	client education	815	4.29	0.03	6	3.83	0.31	0.46
98	safe hand-off/reporting process	815	4.31	0.03	6	4.17	0.31	0.14
93	restraints (e.g., chemical or physical)	814	4.31	0.03	6	4.00	0.37	0.31
27	communication techniques	813	4.33	0.02	6	4.00	0.26	0.33
70	lab values	809	4.34	0.03	6	3.83	0.48	0.50
26	communication barriers (e.g., hearing or language)	818	4.34	0.02	6	4.00	0.26	0.34

Table F. LPN/VN Educators and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Educator Average Importance

Survey position #	Knowledge of:	LPN/VN Educators			SMEs			Avg. Difference
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	
91	removal procedures (e.g., peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter)	814	4.35	0.03	6	3.67	0.49	0.69
80	patient bill of rights	817	4.37	0.03	6	4.50	0.22	-0.13
81	personal limitations of the nurse	817	4.37	0.03	6	4.67	0.21	-0.29
43	drug classifications	814	4.42	0.02	6	3.17	0.54	1.25
39	disease processes	814	4.42	0.02	6	4.00	0.26	0.42
69	isolation equipment/supplies	813	4.44	0.02	5	4.20	0.37	0.24
19	client diagnosis/prognosis	812	4.44	0.02	6	4.33	0.33	0.11
1	accepted medical/nursing abbreviations	818	4.46	0.02	6	4.33	0.42	0.12
116	wound care	816	4.47	0.02	6	4.17	0.31	0.31
24	client positioning	814	4.48	0.02	6	4.33	0.33	0.14
44	drug interactions	817	4.48	0.02	6	4.67	0.21	-0.19
85	physical inspection and data collection	816	4.50	0.02	6	4.17	0.31	0.34
103	signs and symptoms of communicable disease	815	4.51	0.02	6	4.50	0.34	0.01
45	emergency procedures/equipment	815	4.52	0.02	6	4.67	0.21	-0.15
65	intake/output	813	4.54	0.02	6	4.33	0.21	0.21
18	client consent	815	4.54	0.02	6	4.67	0.21	-0.12
11	body mechanics	814	4.54	0.02	6	4.33	0.33	0.21
86	pressure reduction (e.g., prevention or treatment of pressure ulcer)	815	4.55	0.02	6	4.17	0.31	0.39
79	pain scales	818	4.56	0.02	6	4.33	0.21	0.23
105	skin integrity	812	4.57	0.02	6	4.33	0.21	0.23
5	anatomy/physiology	811	4.57	0.02	6	4.33	0.33	0.24
59	Health Insurance Portability and Accountability Act (HIPAA)	817	4.57	0.02	6	4.50	0.22	0.07
84	pharmacology	814	4.58	0.02	6	4.67	0.21	-0.09
17	client condition	818	4.59	0.02	6	4.83	0.17	-0.24
96	risk factors for skin breakdown	815	4.59	0.02	6	4.67	0.21	-0.07
099	safety concerns	814	4.60	0.02	6	4.50	0.22	0.10
104	signs and symptoms of intravenous (IV) line infiltration	816	4.62	0.02	6	4.67	0.21	-0.05
83	personal protective equipment	815	4.65	0.02	6	4.17	0.31	0.49
82	client privacy	817	4.65	0.02	6	4.50	0.22	0.15
25	client rights	814	4.66	0.02	6	4.83	0.17	-0.17
78	pain management	818	4.66	0.02	6	4.67	0.21	0.00
41	documentation	813	4.70	0.02	6	4.50	0.22	0.20
100	scope of practice	817	4.73	0.02	6	4.50	0.34	0.23
102	signs and symptoms of allergic reaction	815	4.76	0.02	6	4.67	0.21	0.09
35	critical signs and symptoms	815	4.78	0.02	6	4.83	0.17	-0.05
63	infection control	811	4.79	0.02	6	4.83	0.17	-0.04
42	drug calculations	818	4.82	0.02	6	4.17	0.40	0.65

Table F. LPN/VN Educators and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Educator Average Importance								
		LPN/VN Educators			SMEs			Avg. Difference
Survey position #	Knowledge of:	N	Avg.	Std. Err.	N	Avg.	Std. Err.	
110	standard/universal precautions	816	4.83	0.02	6	4.50	0.22	0.33
29	confidentiality	815	4.84	0.02	6	4.67	0.21	0.17
7	aseptic and sterile techniques	814	4.85	0.02	6	4.67	0.21	0.18
115	vital signs	815	4.88	0.01	6	4.83	0.17	0.05
95	rights of medication administration	812	4.88	0.01	6	4.83	0.17	0.05
21	how to correctly identify client	808	4.89	0.01	6	5.00	0.00	-0.11

APPENDIX G: LPN/VN SUPERVISORS AND SME KNOWLEDGE STATEMENT RATINGS RANK ORDERED BY LPN/VN SUPERVISOR AVERAGE IMPORTANCE

Preface: How important is the possession of this knowledge by a newly-licensed LPN/VN for safe and effective professional practice, regardless of specific practice setting?

Table G. LPN/VN Supervisors and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Supervisor Average Importance

Survey position #	Knowledge of:	LPN/VN Supervisors			SMEs			Avg. Difference
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	
64	insurance requirements	242	2.64	0.07	6	1.83	0.31	0.81
67	inventory control	239	2.74	0.06	6	2.67	0.42	0.08
54	fetal monitoring	238	2.85	0.09	6	3.50	0.34	-0.65
4	alternative/complementary therapy	239	2.97	0.06	6	2.67	0.42	0.30
109	stages of labor	240	3.07	0.09	6	3.33	0.42	-0.27
55	fiscal responsibility	240	3.10	0.07	6	2.83	0.31	0.27
90	referral process	242	3.12	0.06	5	3.40	0.24	-0.28
72	learning styles	241	3.27	0.06	6	3.17	0.31	0.11
112	traction equipment	240	3.31	0.07	6	3.67	0.21	-0.36
28	community resources	240	3.39	0.06	6	2.67	0.33	0.72
101	seclusion procedures	242	3.48	0.07	6	3.83	0.60	-0.35
10	basic cardiac rhythms	241	3.50	0.07	6	2.83	0.31	0.67
71	leadership and management skills	241	3.51	0.06	6	2.83	0.31	0.68
92	reporting agencies	243	3.53	0.06	6	3.00	0.26	0.53
62	immunization types and recommendations	243	3.54	0.06	6	3.00	0.37	0.54
61	immobilizing equipment	243	3.56	0.05	5	3.80	0.37	-0.24
14	chart review	243	3.59	0.06	6	2.83	0.48	0.76
74	location of Material Safety Data Sheets (MSDS)	242	3.60	0.06	6	3.50	0.34	0.10
47	environment	242	3.64	0.06	6	3.33	0.33	0.31
49	evaluation techniques	242	3.67	0.06	6	3.50	0.34	0.17
38	data collection and analysis	243	3.68	0.06	6	4.17	0.17	-0.48
106	sources of data (e.g., computer or client records)	242	3.69	0.06	6	3.00	0.26	0.69
60	human growth and development	243	3.70	0.06	6	3.83	0.31	-0.13
36	cultural/religious beliefs or practices	243	3.71	0.05	6	3.67	0.33	0.05
89	psychosocial dynamics	243	3.73	0.05	6	3.67	0.21	0.07
2	admission process	241	3.76	0.07	6	3.00	0.52	0.76
37	information technology	240	3.77	0.05	6	3.50	0.43	0.27
111	substance abuse	239	3.77	0.07	6	3.50	0.22	0.27
114	treatment options	242	3.78	0.05	6	3.33	0.21	0.44
31	continuing education needs/opportunities	242	3.79	0.05	6	3.33	0.33	0.45
52	facility resources	241	3.79	0.05	6	3.33	0.33	0.46
50	evidence-based practice	242	3.80	0.06	6	3.83	0.17	-0.04
12	care planning process	243	3.83	0.05	6	3.17	0.31	0.66
68	irrigation procedures	243	3.86	0.06	6	3.67	0.33	0.19
73	client level of acuity	241	3.87	0.06	6	3.83	0.48	0.04

Table G. LPN/VN Supervisors and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Supervisor Average Importance								
		LPN/VN Supervisors			SMEs			Avg. Difference
Survey position #	Knowledge of:	N	Avg.	Std. Err.	N	Avg.	Std. Err.	
66	interdisciplinary team and process	241	3.88	0.06	6	3.50	0.43	0.38
76	nasogastric (NG) procedure	242	3.88	0.06	6	3.83	0.31	0.05
9	assistive resources (e.g., staff or equipment)	240	3.89	0.05	6	3.83	0.31	0.06
97	rules of delegation/assignment	241	3.90	0.06	6	3.83	0.40	0.07
94	bowel/bladder retraining program	242	3.91	0.06	6	3.67	0.49	0.24
16	client compliance	243	3.91	0.05	6	3.83	0.17	0.08
88	proper use and maintenance of equipment	243	3.93	0.05	6	3.83	0.40	0.10
15	client abilities	242	3.96	0.05	6	4.00	0.26	-0.04
34	coping mechanisms	242	3.96	0.06	6	3.67	0.21	0.29
23	client medical records	242	3.97	0.05	6	3.67	0.33	0.30
13	chain of command	243	4.01	0.05	6	3.83	0.31	0.17
113	trade names for medications	243	4.04	0.06	6	3.50	0.43	0.54
33	coordination of care	242	4.05	0.05	6	4.00	0.26	0.05
30	conflict resolution	243	4.05	0.05	6	3.50	0.34	0.55
40	hazardous/biohazardous material	242	4.05	0.05	6	4.00	0.37	0.05
53	feeding equipment/pumps	240	4.07	0.05	6	4.00	0.26	0.07
57	hazardous conditions	241	4.08	0.05	6	4.33	0.21	-0.25
3	advance directives	242	4.09	0.06	6	4.00	0.26	0.09
51	facility policy	240	4.09	0.06	6	4.33	0.21	-0.24
77	nutrition	243	4.10	0.05	6	3.83	0.31	0.27
46	enteral tubes	241	4.11	0.05	6	4.00	0.26	0.11
32	continuity of care	243	4.13	0.05	6	4.17	0.17	-0.04
22	client medical history	242	4.13	0.04	6	4.00	0.37	0.13
6	client goals/outcomes	241	4.14	0.05	6	3.67	0.21	0.47
48	error/occurrence reporting	239	4.14	0.06	6	3.67	0.42	0.48
8	assessment equipment	243	4.15	0.05	6	4.17	0.31	-0.01
108	specimen collection procedure	243	4.16	0.05	6	3.83	0.17	0.33
91	removal procedures (e.g., peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter)	242	4.17	0.06	6	3.67	0.49	0.50
27	communication techniques	240	4.17	0.05	6	4.00	0.26	0.17
56	generic drug names	242	4.17	0.05	6	3.67	0.42	0.51
85	physical inspection and data collection	241	4.17	0.05	6	4.17	0.31	0.01
20	client education	243	4.19	0.05	6	3.83	0.31	0.36
70	lab values	243	4.21	0.05	6	3.83	0.48	0.37
58	high risk behaviors	242	4.22	0.05	6	4.17	0.17	0.06
107	specific medication names	241	4.22	0.05	6	3.83	0.48	0.39
26	communication barriers (e.g., hearing or language)	242	4.23	0.05	6	4.00	0.26	0.23
75	medication reconciliation	241	4.23	0.06	6	4.00	0.37	0.23
93	restraints (e.g., chemical or physical)	243	4.23	0.05	6	4.00	0.37	0.23
81	personal limitations of the nurse	240	4.24	0.06	6	4.67	0.21	-0.42

Table G. LPN/VN Supervisors and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Supervisor Average Importance								
		LPN/VN Supervisors			SMEs			Avg. Difference
Survey position #	Knowledge of:	N	Avg.	Std. Err.	N	Avg.	Std. Err.	
80	patient bill of rights	243	4.26	0.05	6	4.50	0.22	-0.24
98	safe hand-off/reporting process	243	4.28	0.05	6	4.17	0.31	0.11
65	intake/output	243	4.32	0.05	6	4.33	0.21	-0.02
87	procedure for processing orders (e.g., verbal, written or telephone)	241	4.32	0.06	6	4.17	0.40	0.16
84	pharmacology	242	4.33	0.05	6	4.67	0.21	-0.34
59	Health Insurance Portability and Account-ability Act (HIPAA)	243	4.34	0.06	6	4.50	0.22	-0.16
43	drug classifications	243	4.34	0.05	6	3.17	0.54	1.17
19	client diagnosis/prognosis	243	4.35	0.04	6	4.33	0.33	0.01
69	isolation equipment/supplies	243	4.35	0.05	5	4.20	0.37	0.15
18	client consent	243	4.35	0.05	6	4.67	0.21	-0.32
11	body mechanics	240	4.37	0.05	6	4.33	0.33	0.03
24	client positioning	242	4.38	0.04	6	4.33	0.33	0.05
39	disease processes	242	4.38	0.04	6	4.00	0.26	0.38
17	client condition	242	4.43	0.05	6	4.83	0.17	-0.40
1	accepted medical/nursing abbreviations	242	4.43	0.05	6	4.33	0.42	0.10
42	drug calculations	243	4.44	0.05	6	4.17	0.40	0.27
99	safety concerns	241	4.45	0.04	6	4.50	0.22	-0.05
83	personal protective equipment	242	4.47	0.04	6	4.17	0.31	0.30
82	client privacy	243	4.50	0.04	6	4.50	0.22	0.00
25	client rights	241	4.50	0.04	6	4.83	0.17	-0.33
103	signs and symptoms of communicable disease	242	4.51	0.05	6	4.50	0.34	0.01
79	pain scales	242	4.51	0.04	6	4.33	0.21	0.18
44	drug interactions	243	4.51	0.04	6	4.67	0.21	-0.15
116	wound care	243	4.53	0.04	6	4.17	0.31	0.37
104	signs and symptoms of intravenous (IV) line infiltration	242	4.54	0.05	6	4.67	0.21	-0.13
105	skin integrity	239	4.57	0.04	6	4.33	0.21	0.24
5	anatomy/physiology	242	4.57	0.04	6	4.33	0.33	0.24
45	emergency procedures/equipment	242	4.58	0.04	6	4.67	0.21	-0.08
100	scope of practice	242	4.60	0.04	6	4.50	0.34	0.10
86	pressure reduction (e.g., prevention or treat-ment of pressure ulcer)	241	4.63	0.04	6	4.17	0.31	0.46
78	pain management	242	4.64	0.03	6	4.67	0.21	-0.02
96	risk factors for skin breakdown	242	4.65	0.04	6	4.67	0.21	-0.02
29	confidentiality	242	4.68	0.04	6	4.67	0.21	0.01
63	infection control	240	4.69	0.04	6	4.83	0.17	-0.14
102	signs and symptoms of allergic reaction	243	4.70	0.03	6	4.67	0.21	0.03
21	how to correctly identify client	242	4.71	0.04	6	5.00	0.00	-0.29
41	documentation	242	4.72	0.03	6	4.50	0.22	0.22
110	standard/universal precautions	239	4.72	0.04	6	4.50	0.22	0.22

Table G. LPN/VN Supervisors and SME Knowledge Statement Ratings Rank Ordered by LPN/VN Supervisor Average Importance								
Survey position #	Knowledge of:	LPN/VN Supervisors			SMEs			Avg. Difference
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	
7	aseptic and sterile techniques	243	4.74	0.03	6	4.67	0.21	0.07
95	rights of medication administration	243	4.77	0.03	6	4.83	0.17	-0.06
35	critical signs and symptoms	241	4.78	0.03	6	4.83	0.17	-0.05
115	vital signs	243	4.81	0.03	6	4.83	0.17	-0.02

APPENDIX H: LABORATORY VALUES SORTED BY SURVEY ORDER

Preface: Is it important for the newly-licensed LPN/VN to memorize the following laboratory values?

Table H. Laboratory Values Sorted by Survey Order

Lab Values		N	%
Lab1	Normal lab value for BUN (blood, urea, nitrogen)	1581	76.90
Lab2	Normal lab value for arterial blood gases (pH_1, PO_2, PCO_2, SaO_2, HCO_3)	1578	56.80
Lab3	Normal lab value for cholesterol (total)	1569	53.70
Lab4	Normal lab value for glucose	1584	95.40
Lab5	Normal lab value for hematocrit (Hct)	1583	88.10
Lab6	Normal lab value for hemoglobin (Hgb)	1581	90.10
Lab7	Normal lab value for hemoglobin A1C (HbA_1C)	1574	60.70
Lab8	Normal lab value for platelets	1567	72.80
Lab9	Normal lab value for potassium (K^+)	1582	91.80
Lab10	Normal lab value for red blood count (RBC)	1577	72.50
Lab11	Normal lab value for sodium (Na^+)	1580	84.40
Lab12	Normal lab value for white blood count (WBC)	1583	90.50
Lab13	Normal lab value for albumin (blood)	1568	38.70
Lab14	Normal lab value for ALT (SGPT)	1572	28.80
Lab15	Normal lab value for ammonia	1575	31.50
Lab16	Normal lab value for AST (SGOT)	1571	28.60
Lab17	Normal lab value for bilirubin	1574	37.50
Lab18	Normal lab value for bleeding time	1577	69.10
Lab19	Normal lab value for cholesterol (HDL and LDL)	1571	51.00
Lab20	Normal lab value for creatinine	1574	67.00
Lab21	Normal lab value for digoxin	1571	72.30
Lab22	Normal lab value for ESR	1566	29.80
Lab23	Normal lab value for lithium	1574	37.20
Lab24	Normal lab value for magnesium	1571	41.20
Lab25	Normal lab value for PTT and APTT	1578	70.50
Lab26	Normal lab value for phosphorus/phosphate	1572	25.40
Lab27	Normal lab value for protein (total)	1566	33.50
Lab28	Normal lab value for prothrombin time (PT)	1575	78.30
Lab29	Normal lab value for urine (alb, pH, white blood cell count [WBC] and %T lymphocytes [differential])	1573	53.50
Lab30	Normal lab value for International Normalized Ratio (INR)	1578	75.50

APPENDIX I: LABORATORY VALUES RANKED BY PERCENT ANSWERING YES

Preface: Is it important for the newly-licensed LPN/VN to memorize the following laboratory values?

Table I. Laboratory Values Ranked by Percent Answering Yes

Lab Values		N	%
Lab26	Normal lab value for phosphorus/phosphate	1572	25.40
Lab16	Normal lab value for AST (SGOT)	1571	28.60
Lab14	Normal lab value for ALT (SGPT)	1572	28.80
Lab22	Normal lab value for ESR	1566	29.80
Lab15	Normal lab value for ammonia	1575	31.50
Lab27	Normal lab value for protein (total)	1566	33.50
Lab23	Normal lab value for lithium	1574	37.20
Lab17	Normal lab value for bilirubin	1574	37.50
Lab13	Normal lab value for albumin (blood)	1568	38.70
Lab24	Normal lab value for magnesium	1571	41.20
Lab19	Normal lab value for cholesterol (HDL and LDL)	1571	51.00
Lab29	Normal lab value for urine (alb, pH, white blood cell count [WBC] and %T lymphocytes [differential])	1573	53.50
Lab3	Normal lab value for cholesterol (total)	1569	53.70
Lab2	Normal lab value for arterial blood gases (pH_1, PO_2, PCO_2, SaO_2, HCO_3)	1578	56.80
Lab7	Normal lab value for hemoglobin A1C (HbA_1C)	1574	60.70
Lab20	Normal lab value for creatinine	1574	67.00
Lab18	Normal lab value for bleeding time	1577	69.10
Lab25	Normal lab value for PTT and APTT	1578	70.50
Lab21	Normal lab value for digoxin	1571	72.30
Lab10	Normal lab value for red blood count (RBC)	1577	72.50
Lab8	Normal lab value for platelets	1567	72.80
Lab30	Normal lab value for International Normalized Ratio (INR)	1578	75.50
Lab1	Normal lab value for BUN (blood, urea, nitrogen)	1581	76.90
Lab28	Normal lab value for prothrombin time (PT)	1575	78.30
Lab11	Normal lab value for sodium (Na^+)	1580	84.40
Lab5	Normal lab value for hematocrit (Hct)	1583	88.10
Lab6	Normal lab value for hemoglobin (Hgb)	1581	90.10
Lab12	Normal lab value for white blood count (WBC)	1583	90.50
Lab9	Normal lab value for potassium (K^+)	1582	91.80
Lab4	Normal lab value for glucose	1584	95.40

APPENDIX J: KNOWLEDGE STATEMENTS SUBGROUP ANALYSIS: PRIMARY JOB TITLE

Table J. Knowledge Statements Subgroup Analysis: Primary Job Title

Survey position #	Knowledge of:	Newly Licensed LPN/VN			LPN/VN Educator			LPN/VN Supervisor			New v.s. Educator	New v.s. Supervisor	Educator v.s. Supervisor
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	Difference	Difference	Difference
1	accepted medical/nursing abbreviations	516	4.11	0.04	818	4.46	0.02	242	4.43	0.05	-0.35	-0.32	0.03
2	admission process	516	3.82	0.04	814	3.60	0.03	241	3.76	0.07	0.22	0.06	-0.16
3	advance directives	513	4.08	0.04	812	4.06	0.03	242	4.09	0.06	0.02	-0.01	-0.03
4	alternative/complementary therapy	507	3.31	0.04	809	3.14	0.03	239	2.97	0.06	0.17	0.34	0.17
5	anatomy/physiology	516	4.37	0.03	811	4.57	0.02	242	4.57	0.04	-0.20	-0.20	0.00
6	client goals/outcomes	514	4.17	0.04	816	4.24	0.02	241	4.14	0.05	-0.07	0.03	0.10
7	aseptic and sterile techniques	510	4.75	0.02	814	4.85	0.02	243	4.74	0.03	-0.10	0.01	0.11
8	assessment equipment	515	4.17	0.03	812	4.24	0.03	243	4.15	0.05	-0.07	0.02	0.09
9	assistive resources (e.g., staff or equipment)	517	3.96	0.04	809	3.92	0.03	240	3.89	0.05	0.04	0.07	0.03
10	basic cardiac rhythms	515	3.96	0.04	814	3.44	0.03	241	3.50	0.07	0.52	0.46	-0.06
11	body mechanics	513	4.17	0.04	814	4.54	0.02	240	4.37	0.05	-0.37	-0.20	0.17
12	care planning process	517	3.81	0.04	814	3.90	0.03	243	3.83	0.05	-0.09	-0.02	0.07
13	chain of command	516	3.78	0.04	814	4.20	0.03	243	4.01	0.05	-0.42	-0.23	0.19
14	chart review	513	4.04	0.04	815	3.55	0.03	243	3.59	0.06	0.49	0.45	-0.04
15	client abilities	512	4.07	0.03	812	4.22	0.02	242	3.96	0.05	-0.15	0.11	0.26
16	client compliance	517	4.07	0.04	816	4.01	0.03	243	3.91	0.05	0.06	0.16	0.10
17	client condition	515	4.49	0.03	818	4.59	0.02	242	4.43	0.05	-0.10	0.06	0.16
18	client consent	515	4.47	0.03	815	4.54	0.02	243	4.35	0.05	-0.07	0.12	0.19
19	client diagnosis/prognosis	515	4.49	0.03	812	4.44	0.02	243	4.35	0.04	0.05	0.14	0.09
20	client education	516	4.25	0.03	815	4.29	0.03	243	4.19	0.05	-0.04	0.06	0.10
21	how to correctly identify client	517	4.66	0.03	808	4.89	0.01	242	4.71	0.04	-0.23	-0.05	0.18
22	client medical history	517	4.29	0.03	813	4.20	0.02	242	4.13	0.04	0.09	0.16	0.07
23	client medical records	515	4.07	0.04	813	3.86	0.03	242	3.97	0.05	0.21	0.10	-0.11
24	client positioning	516	4.22	0.03	814	4.48	0.02	242	4.38	0.04	-0.26	-0.16	0.10
25	client rights	510	4.44	0.03	814	4.66	0.02	241	4.50	0.04	-0.22	-0.06	0.16
26	communication barriers (e.g., hearing or language)	512	4.16	0.03	818	4.34	0.02	242	4.23	0.05	-0.18	-0.07	0.11

Table J. Knowledge Statements Subgroup Analysis: Primary Job Title													
		Newly Licensed LPN/VN			LPN/VN Educator			LPN/VN Supervisor			New v.s. Educator	New v.s. Supervisor	Educator v.s. Supervisor
Survey position #	Knowledge of:	N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	Difference	Difference	Difference
27	communication techniques	517	4.10	0.03	813	4.33	0.02	240	4.17	0.05	-0.23	-0.07	0.16
28	community resources	517	3.65	0.04	813	3.55	0.03	240	3.39	0.06	0.10	0.26	0.16
29	confidentiality	513	4.64	0.03	815	4.84	0.02	242	4.68	0.04	-0.20	-0.04	0.16
30	conflict resolution	517	4.06	0.03	814	3.99	0.03	243	4.05	0.05	0.07	0.01	-0.06
31	continuing education needs/ opportunities	514	4.05	0.04	816	3.80	0.03	242	3.79	0.05	0.25	0.26	0.01
32	continuity of care	516	4.15	0.03	814	4.07	0.03	243	4.13	0.05	0.08	0.02	-0.06
33	coordination of care	514	4.14	0.03	812	3.97	0.03	242	4.05	0.05	0.17	0.09	-0.08
34	coping mechanisms	515	4.02	0.03	810	4.01	0.03	242	3.96	0.06	0.01	0.06	0.05
35	critical signs and symptoms	514	4.73	0.02	815	4.78	0.02	241	4.78	0.03	-0.05	-0.05	0.00
36	cultural/religious beliefs or practices	516	3.87	0.04	817	3.93	0.03	243	3.71	0.05	-0.06	0.16	0.22
37	information technology	517	3.67	0.04	814	3.73	0.03	240	3.77	0.05	-0.06	-0.10	-0.04
38	data collection and analysis	516	4.13	0.04	817	4.11	0.03	243	3.68	0.06	0.02	0.45	0.43
39	disease processes	516	4.34	0.03	814	4.42	0.02	242	4.38	0.04	-0.08	-0.04	0.04
40	hazardous/biohazardous material	515	4.23	0.04	816	4.22	0.03	242	4.05	0.05	0.01	0.18	0.17
41	documentation	516	4.65	0.03	813	4.70	0.02	242	4.72	0.03	-0.05	-0.07	-0.02
42	drug calculations	516	4.59	0.03	818	4.82	0.02	243	4.44	0.05	-0.23	0.15	0.38
43	drug classifications	513	4.30	0.04	814	4.42	0.02	243	4.34	0.05	-0.12	-0.04	0.08
44	drug interactions	516	4.54	0.03	817	4.48	0.02	243	4.51	0.04	0.06	0.03	-0.03
45	emergency procedures/ equipment	516	4.63	0.03	815	4.52	0.02	242	4.58	0.04	0.11	0.05	-0.06
46	enteral tubes	515	4.12	0.04	815	4.09	0.02	241	4.11	0.05	0.03	0.01	-0.02
47	environment	516	3.71	0.04	810	3.79	0.03	242	3.64	0.06	-0.08	0.07	0.15
48	error/occurrence reporting	515	4.22	0.04	817	4.14	0.03	239	4.14	0.06	0.08	0.08	0.00
49	evaluation techniques	513	3.98	0.04	809	3.98	0.03	242	3.67	0.06	0.00	0.31	0.31
50	evidence-based practice	514	3.82	0.04	813	3.93	0.03	242	3.80	0.06	-0.11	0.02	0.13
51	facility policy	516	4.03	0.04	811	4.18	0.03	240	4.09	0.06	-0.15	-0.06	0.09
52	facility resources	513	3.92	0.04	812	3.82	0.03	241	3.79	0.05	0.10	0.13	0.03
53	feeding equipment/pumps	515	4.15	0.04	806	4.03	0.03	240	4.07	0.05	0.12	0.08	-0.04

Table J. Knowledge Statements Subgroup Analysis: Primary Job Title

Survey position #	Knowledge of:	Newly Licensed LPN/VN			LPN/VN Educator			LPN/VN Supervisor			New v.s. Educator	New v.s. Supervisor	Educator v.s. Supervisor
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	Difference	Difference	Difference
54	fetal monitoring	513	3.93	0.05	814	3.08	0.04	238	2.85	0.09	0.85	1.08	0.23
55	fiscal responsibility	513	3.50	0.05	815	3.08	0.03	240	3.10	0.07	0.42	0.40	-0.02
56	generic drug names	514	4.23	0.04	813	4.15	0.03	242	4.17	0.05	0.08	0.06	-0.02
57	hazardous conditions	517	4.29	0.04	814	4.24	0.03	241	4.08	0.05	0.05	0.21	0.16
58	high risk behaviors	516	4.36	0.03	817	4.23	0.03	242	4.22	0.05	0.13	0.14	0.01
59	Health Insurance Portability and Accountability Act (HIPAA)	517	4.38	0.04	817	4.57	0.02	243	4.34	0.06	-0.19	0.04	0.23
60	human growth and development	516	3.84	0.04	815	4.02	0.03	243	3.70	0.06	-0.18	0.14	0.32
61	immobilizing equipment	516	3.74	0.04	811	3.69	0.03	243	3.56	0.05	0.05	0.18	0.13
62	immunization types and recommendations	515	3.90	0.04	814	3.63	0.03	243	3.54	0.06	0.27	0.36	0.09
63	infection control	511	4.72	0.02	811	4.79	0.02	240	4.69	0.04	-0.07	0.03	0.10
64	insurance requirements	515	3.15	0.05	813	2.71	0.04	242	2.64	0.07	0.44	0.51	0.07
65	intake/output	516	4.22	0.04	813	4.54	0.02	243	4.32	0.05	-0.32	-0.10	0.22
66	interdisciplinary team and process	516	3.67	0.04	816	3.69	0.03	241	3.88	0.06	-0.02	-0.21	-0.19
67	inventory control	513	3.26	0.05	808	2.74	0.04	239	2.74	0.06	0.52	0.52	0.00
68	irrigation procedures	517	4.02	0.04	814	3.94	0.03	243	3.86	0.06	0.08	0.16	0.08
69	isolation equipment/supplies	515	4.26	0.04	813	4.44	0.02	243	4.35	0.05	-0.18	-0.09	0.09
70	lab values	514	4.43	0.03	809	4.34	0.03	243	4.21	0.05	0.09	0.22	0.13
71	leadership and management skills	515	3.83	0.04	810	3.58	0.03	241	3.51	0.06	0.25	0.32	0.07
72	learning styles	516	3.48	0.05	814	3.32	0.03	241	3.27	0.06	0.16	0.21	0.05
73	client level of acuity	515	3.97	0.04	814	3.90	0.03	241	3.87	0.06	0.07	0.10	0.03
74	location of Material Safety Data Sheets (MSDS)	516	3.77	0.04	814	3.64	0.04	242	3.60	0.06	0.13	0.17	0.04
75	medication reconciliation	513	4.19	0.04	807	4.12	0.03	241	4.23	0.06	0.07	-0.04	-0.11
76	nasogastric (NG) procedure	515	4.09	0.04	818	4.08	0.03	242	3.88	0.06	0.01	0.21	0.20
77	nutrition	516	4.17	0.04	818	4.18	0.02	243	4.10	0.05	-0.01	0.07	0.08
78	pain management	517	4.56	0.03	818	4.66	0.02	242	4.64	0.03	-0.10	-0.08	0.02

Table J. Knowledge Statements Subgroup Analysis: Primary Job Title													
		Newly Licensed LPN/VN			LPN/VN Educator			LPN/VN Supervisor			New v.s. Educator	New v.s. Supervisor	Educator v.s. Supervisor
Survey position #	Knowledge of:	N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	Difference	Difference	Difference
79	pain scales	516	4.39	0.03	818	4.56	0.02	242	4.51	0.04	-0.17	-0.12	0.05
80	patient bill of rights	514	4.25	0.03	817	4.37	0.03	243	4.26	0.05	-0.12	-0.01	0.11
81	personal limitations of the nurse	512	4.28	0.04	817	4.37	0.03	240	4.24	0.06	-0.09	0.04	0.13
82	client privacy	516	4.48	0.03	817	4.65	0.02	243	4.50	0.04	-0.17	-0.02	0.15
83	personal protective equipment	514	4.49	0.03	815	4.65	0.02	242	4.47	0.04	-0.16	0.02	0.18
84	pharmacology	513	4.42	0.03	814	4.58	0.02	242	4.33	0.05	-0.16	0.09	0.25
85	physical inspection and data collection	515	4.37	0.03	816	4.50	0.02	241	4.17	0.05	-0.13	0.20	0.33
86	pressure reduction (e.g., prevention or treatment of pressure ulcer)	515	4.50	0.03	815	4.55	0.02	241	4.63	0.04	-0.05	-0.13	-0.08
87	procedure for processing orders (e.g., verbal, written or telephone)	516	4.43	0.03	816	4.17	0.03	241	4.32	0.06	0.26	0.11	-0.15
88	proper use and maintenance of equipment	513	4.07	0.03	815	3.88	0.03	243	3.93	0.05	0.19	0.14	-0.05
89	psychosocial dynamics	515	3.76	0.04	811	3.81	0.03	243	3.73	0.05	-0.05	0.03	0.08
90	referral process	512	3.47	0.05	809	3.31	0.03	242	3.12	0.06	0.16	0.35	0.19
91	removal procedures (e.g., peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter)	511	4.30	0.04	814	4.35	0.03	242	4.17	0.06	-0.05	0.13	0.18
92	reporting agencies	512	3.66	0.04	814	3.51	0.03	243	3.53	0.06	0.15	0.13	-0.02
93	restraints (e.g., chemical or physical)	513	3.97	0.04	814	4.31	0.03	243	4.23	0.05	-0.34	-0.26	0.08
94	bowel/bladder retraining program	516	3.94	0.04	815	3.89	0.03	242	3.91	0.06	0.05	0.03	-0.02
95	rights of medication administration	517	4.67	0.03	812	4.88	0.01	243	4.77	0.03	-0.21	-0.10	0.11
96	risk factors for skin breakdown	516	4.49	0.03	815	4.59	0.02	242	4.65	0.04	-0.10	-0.16	-0.06
97	rules of delegation/assignment	515	4.00	0.04	815	4.03	0.03	241	3.90	0.06	-0.03	0.10	0.13
98	safe hand-off/reporting process	512	4.15	0.04	815	4.31	0.03	243	4.28	0.05	-0.16	-0.13	0.03
99	safety concerns	512	4.41	0.03	814	4.60	0.02	241	4.45	0.04	-0.19	-0.04	0.15

Table J. Knowledge Statements Subgroup Analysis: Primary Job Title

Survey position #	Knowledge of:	Newly Licensed LPN/VN			LPN/VN Educator			LPN/VN Supervisor			New v.s. Educator	New v.s. Supervisor	Educator v.s. Supervisor
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	Difference	Difference	Difference
100	scope of practice	513	4.55	0.03	817	4.73	0.02	242	4.60	0.04	-0.18	-0.05	0.13
101	seclusion procedures	504	3.94	0.04	810	3.66	0.04	242	3.48	0.07	0.28	0.46	0.18
102	signs and symptoms of allergic reaction	516	4.75	0.02	815	4.76	0.02	243	4.70	0.03	-0.01	0.05	0.06
103	signs and symptoms of communicable disease	512	4.69	0.02	815	4.51	0.02	242	4.51	0.05	0.18	0.18	0.00
104	signs and symptoms of intravenous (IV) line infiltration	515	4.55	0.03	816	4.62	0.02	242	4.54	0.05	-0.07	0.01	0.08
105	skin integrity	515	4.46	0.03	812	4.57	0.02	239	4.57	0.04	-0.11	-0.11	0.00
106	sources of data (e.g., computer or client records)	515	3.95	0.04	813	3.87	0.03	242	3.69	0.06	0.08	0.26	0.18
107	specific medication names	516	4.25	0.04	813	4.26	0.03	241	4.22	0.05	-0.01	0.03	0.04
108	specimen collection procedure	514	4.25	0.03	813	4.22	0.02	243	4.16	0.05	0.03	0.09	0.06
109	stages of labor	516	3.79	0.05	809	3.34	0.04	240	3.07	0.09	0.45	0.72	0.27
110	standard/universal precautions	514	4.64	0.03	816	4.83	0.02	239	4.72	0.04	-0.19	-0.08	0.11
111	substance abuse	513	3.95	0.04	811	3.92	0.03	239	3.77	0.07	0.03	0.18	0.15
112	traction equipment	515	3.66	0.05	813	3.50	0.03	240	3.31	0.07	0.16	0.35	0.19
113	trade names for medications	514	4.10	0.04	811	4.08	0.03	243	4.04	0.06	0.02	0.06	0.04
114	treatment options	513	4.08	0.04	814	3.79	0.03	242	3.78	0.05	0.29	0.30	0.01
115	vital signs	513	4.76	0.02	815	4.88	0.01	243	4.81	0.03	-0.12	-0.05	0.07
116	wound care	513	4.55	0.03	816	4.47	0.02	243	4.53	0.04	0.08	0.02	-0.06

Table K. Knowledge Statements Subgroup Analysis: Facility

Survey position #	Knowledge of:	Hospital			Long-Term Care			Community-Based Facility			Other		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
1	accepted medical/nursing abbreviations	640	4.43	0.03	487	4.25	0.04	206	4.26	0.06	146	4.37	0.07
2	admission process	637	3.64	0.03	488	3.85	0.04	204	3.48	0.07	145	3.74	0.07
3	advance directives	636	4.05	0.03	485	4.17	0.04	205	3.93	0.07	144	4.12	0.07
4	alternative/complementary therapy	633	3.09	0.04	482	3.20	0.04	203	3.19	0.07	142	3.40	0.07
5	anatomy/physiology	637	4.57	0.02	486	4.45	0.03	205	4.51	0.05	146	4.47	0.06
6	client goals/outcomes	639	4.18	0.03	487	4.16	0.04	206	4.23	0.05	143	4.33	0.06
7	aseptic and sterile techniques	636	4.86	0.02	484	4.71	0.03	205	4.76	0.04	145	4.86	0.04
8	assessment equipment	636	4.21	0.03	488	4.18	0.03	206	4.21	0.06	145	4.26	0.06
9	assistive resources (e.g., staff or equipment)	635	3.92	0.03	485	3.89	0.04	205	3.99	0.06	145	4.03	0.07
10	basic cardiac rhythms	638	3.54	0.04	485	3.63	0.05	205	3.83	0.08	146	3.62	0.09
11	body mechanics	636	4.49	0.03	485	4.27	0.04	204	4.34	0.06	145	4.52	0.06
12	care planning process	639	3.82	0.03	488	3.92	0.04	206	3.80	0.06	144	3.92	0.07
13	chain of command	637	4.11	0.03	488	3.93	0.04	206	3.95	0.06	146	4.22	0.07
14	chart review	638	3.56	0.04	486	3.81	0.04	205	3.87	0.06	146	3.80	0.08
15	client abilities	636	4.14	0.03	485	4.10	0.04	204	4.09	0.05	145	4.27	0.06
16	client compliance	640	3.95	0.03	489	4.04	0.04	204	4.08	0.06	146	4.17	0.06
17	client condition	640	4.55	0.02	487	4.49	0.03	205	4.53	0.04	146	4.64	0.05
18	client consent	638	4.50	0.03	488	4.46	0.03	204	4.46	0.05	146	4.60	0.05
19	client diagnosis/prognosis	637	4.42	0.03	486	4.45	0.03	205	4.49	0.04	145	4.47	0.05
20	client education	638	4.29	0.03	489	4.18	0.04	205	4.37	0.05	145	4.21	0.07
21	how to correctly identify client	634	4.86	0.02	487	4.70	0.03	205	4.72	0.04	145	4.83	0.04
22	client medical history	637	4.20	0.03	487	4.21	0.03	206	4.33	0.05	146	4.18	0.05
23	client medical records	637	3.85	0.03	485	4.00	0.04	205	4.06	0.06	146	3.97	0.06
24	client positioning	637	4.44	0.03	489	4.28	0.03	206	4.31	0.06	144	4.51	0.05
25	client rights	636	4.63	0.02	484	4.51	0.03	205	4.50	0.05	145	4.56	0.05
26	communication barriers (e.g., hearing or language)	638	4.31	0.03	486	4.21	0.03	205	4.24	0.05	146	4.32	0.06

Table K. Knowledge Statements Subgroup Analysis: Facility

Survey position #	Knowledge of:	Hospital			Long-Term Care			Community-Based Facility			Other		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
27	communication techniques	636	4.27	0.03	488	4.17	0.04	206	4.18	0.06	144	4.35	0.05
28	community resources	636	3.56	0.03	488	3.48	0.04	205	3.67	0.07	146	3.64	0.08
29	confidentiality	638	4.81	0.02	486	4.69	0.03	206	4.65	0.04	144	4.82	0.04
30	conflict resolution	638	3.96	0.03	489	4.07	0.03	205	4.10	0.05	145	4.08	0.06
31	continuing education needs/ opportunities	639	3.82	0.03	484	3.91	0.04	206	3.96	0.06	146	3.88	0.07
32	continuity of care	639	4.03	0.03	488	4.15	0.04	205	4.20	0.05	145	4.14	0.06
33	coordination of care	635	3.94	0.03	488	4.12	0.03	205	4.19	0.06	145	3.94	0.07
34	coping mechanisms	635	3.98	0.03	486	4.00	0.04	204	4.11	0.05	145	4.01	0.06
35	critical signs and symptoms	637	4.77	0.02	486	4.79	0.02	206	4.73	0.04	145	4.74	0.05
36	cultural/religious beliefs or practices	639	3.89	0.03	489	3.83	0.04	206	3.88	0.06	146	3.91	0.07
37	information technology	639	3.71	0.03	484	3.69	0.04	206	3.78	0.06	146	3.75	0.06
38	data collection and analysis	640	4.06	0.03	487	4.05	0.04	206	4.01	0.07	146	4.04	0.07
39	disease processes	637	4.41	0.03	488	4.38	0.03	206	4.39	0.05	145	4.32	0.06
40	hazardous/biohazardous material	639	4.17	0.03	486	4.14	0.04	206	4.32	0.06	146	4.24	0.07
41	documentation	638	4.66	0.02	486	4.72	0.02	205	4.67	0.04	146	4.70	0.05
42	drug calculations	640	4.76	0.02	488	4.58	0.04	206	4.57	0.05	146	4.77	0.05
43	drug classifications	638	4.38	0.03	486	4.32	0.03	205	4.33	0.06	144	4.51	0.05
44	drug interactions	639	4.49	0.03	489	4.53	0.03	205	4.50	0.05	146	4.52	0.06
45	emergency procedures/ equipment	640	4.53	0.03	485	4.65	0.03	206	4.58	0.05	146	4.42	0.06
46	enteral tubes	637	4.07	0.03	487	4.16	0.03	205	4.07	0.06	146	4.08	0.06
47	environment	634	3.74	0.03	489	3.66	0.04	205	3.77	0.06	143	3.90	0.06
48	error/occurrence reporting	636	4.04	0.03	486	4.22	0.04	206	4.26	0.05	146	4.34	0.06
49	evaluation techniques	636	3.90	0.03	482	3.92	0.04	205	3.97	0.06	144	3.99	0.06
50	evidence-based practice	637	3.92	0.03	484	3.84	0.04	205	3.77	0.06	146	3.87	0.07
51	facility policy	638	4.13	0.03	484	4.12	0.04	205	4.00	0.06	144	4.26	0.06
52	facility resources	637	3.85	0.03	483	3.86	0.04	204	3.79	0.06	145	3.88	0.07
53	feeding equipment/pumps	631	4.02	0.03	482	4.18	0.03	205	4.01	0.06	146	4.06	0.07

Table K. Knowledge Statements Subgroup Analysis: Facility

Survey position #	Knowledge of:	Hospital			Long-Term Care			Community-Based Facility			Other		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
54	fetal monitoring	636	3.15	0.05	483	3.41	0.06	203	3.57	0.09	146	3.32	0.11
55	fiscal responsibility	639	3.13	0.04	485	3.26	0.05	205	3.39	0.07	144	3.29	0.09
56	generic drug names	638	4.13	0.03	487	4.21	0.04	203	4.22	0.06	144	4.31	0.07
57	hazardous conditions	638	4.18	0.03	487	4.23	0.04	205	4.26	0.06	145	4.37	0.06
58	high risk behaviors	639	4.21	0.03	488	4.35	0.03	206	4.26	0.05	146	4.32	0.06
59	Health Insurance Portability and Accountability Act (HIPAA)	640	4.53	0.03	489	4.45	0.03	206	4.32	0.06	145	4.58	0.06
60	human growth and development	639	3.98	0.03	487	3.74	0.04	205	4.03	0.06	146	3.97	0.07
61	immobilizing equipment	632	3.71	0.03	489	3.66	0.04	206	3.68	0.07	146	3.69	0.07
62	immunization types and recommendations	636	3.64	0.03	488	3.74	0.04	205	3.84	0.07	146	3.66	0.08
63	infection control	635	4.75	0.02	481	4.74	0.02	203	4.72	0.04	146	4.82	0.04
64	insurance requirements	635	2.70	0.04	489	2.96	0.05	205	3.07	0.07	145	2.77	0.09
65	intake/output	636	4.53	0.03	488	4.31	0.03	206	4.17	0.06	146	4.51	0.06
66	interdisciplinary team and process	639	3.67	0.03	486	3.75	0.04	205	3.75	0.06	146	3.66	0.08
67	inventory control	633	2.80	0.04	483	3.00	0.05	204	3.06	0.07	145	2.94	0.10
68	irrigation procedures	637	3.93	0.03	489	3.97	0.04	206	3.95	0.06	146	4.03	0.07
69	isolation equipment/supplies	637	4.43	0.03	486	4.34	0.03	206	4.24	0.06	145	4.35	0.06
70	lab values	636	4.33	0.03	485	4.38	0.03	206	4.31	0.06	144	4.35	0.06
71	leadership and management skills	635	3.49	0.04	486	3.85	0.04	205	3.67	0.07	145	3.66	0.08
72	learning styles	637	3.28	0.04	485	3.41	0.05	206	3.52	0.07	146	3.39	0.08
73	client level of acuity	639	3.89	0.03	485	3.95	0.04	206	3.99	0.06	144	3.94	0.08
74	location of Material Safety Data Sheets (MSDS)	637	3.64	0.04	487	3.70	0.05	206	3.72	0.07	145	3.70	0.08
75	medication reconciliation	633	4.16	0.03	485	4.14	0.04	203	4.25	0.06	145	4.09	0.07
76	nasogastric (NG) procedure	640	4.08	0.03	488	4.01	0.04	205	3.97	0.07	146	4.10	0.07
77	nutrition	639	4.13	0.03	489	4.18	0.04	206	4.16	0.05	146	4.21	0.06
78	pain management	640	4.62	0.02	488	4.66	0.03	206	4.53	0.04	146	4.64	0.05
79	pain scales	640	4.53	0.02	488	4.47	0.03	206	4.45	0.04	145	4.52	0.06

Table K. Knowledge Statements Subgroup Analysis: Facility

Survey position #	Knowledge of:	Hospital			Long-Term Care			Community-Based Facility			Other		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
80	patient bill of rights	639	4.34	0.03	486	4.30	0.03	206	4.27	0.05	146	4.29	0.07
81	personal limitations of the nurse	640	4.34	0.03	482	4.29	0.04	206	4.32	0.05	145	4.41	0.06
82	client privacy	638	4.61	0.02	489	4.52	0.03	206	4.51	0.05	146	4.63	0.05
83	personal protective equipment	639	4.63	0.02	486	4.46	0.03	205	4.56	0.04	145	4.64	0.05
84	pharmacology	638	4.54	0.02	487	4.44	0.03	203	4.38	0.05	144	4.53	0.06
85	physical inspection and data collection	639	4.44	0.03	486	4.40	0.03	206	4.36	0.05	146	4.43	0.07
86	pressure reduction (e.g., prevention or treatment of pressure ulcer)	637	4.57	0.02	485	4.56	0.03	206	4.47	0.05	146	4.53	0.06
87	procedure for processing orders (e.g., verbal, written or telephone)	639	4.15	0.03	485	4.44	0.03	206	4.36	0.05	146	4.21	0.08
88	proper use and maintenance of equipment	638	3.93	0.03	485	3.96	0.04	205	4.06	0.05	146	3.92	0.07
89	psychosocial dynamics	634	3.75	0.03	487	3.79	0.04	205	3.81	0.06	146	3.90	0.07
90	referral process	631	3.27	0.04	485	3.35	0.04	205	3.51	0.06	146	3.34	0.08
91	removal procedures (e.g., peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter)	638	4.33	0.03	484	4.28	0.04	206	4.27	0.06	144	4.36	0.06
92	reporting agencies	637	3.48	0.04	486	3.67	0.04	203	3.64	0.07	146	3.49	0.08
93	restraints (e.g., chemical or physical)	637	4.27	0.03	484	4.15	0.04	206	3.98	0.07	146	4.24	0.08
94	bowel/bladder retraining program	638	3.87	0.03	488	3.98	0.04	205	3.83	0.06	145	3.97	0.07
95	rights of medication administration	637	4.84	0.02	488	4.76	0.02	205	4.64	0.05	145	4.87	0.03
96	risk factors for skin breakdown	637	4.57	0.02	487	4.62	0.03	206	4.44	0.05	146	4.57	0.06
97	rules of delegation/assignment	639	3.98	0.03	485	4.03	0.04	205	4.00	0.06	145	4.04	0.07
98	safe hand-off/reporting process	640	4.32	0.03	484	4.19	0.04	204	4.17	0.06	145	4.24	0.06
99	safety concerns	635	4.57	0.02	487	4.42	0.03	206	4.49	0.05	144	4.59	0.05
100	scope of practice	637	4.70	0.02	487	4.58	0.03	205	4.63	0.05	146	4.73	0.04

Table K. Knowledge Statements Subgroup Analysis: Facility

Survey position #	Knowledge of:	Hospital			Long-Term Care			Community-Based Facility			Other		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
101	seclusion procedures	633	3.70	0.04	479	3.70	0.05	203	3.76	0.08	145	3.77	0.08
102	signs and symptoms of allergic reaction	639	4.75	0.02	488	4.73	0.02	205	4.73	0.04	145	4.80	0.04
103	signs and symptoms of communicable disease	636	4.49	0.02	486	4.61	0.03	204	4.63	0.04	146	4.63	0.05
104	signs and symptoms of intravenous (IV) line infiltration	639	4.63	0.02	486	4.54	0.03	206	4.48	0.06	146	4.64	0.05
105	skin integrity	636	4.54	0.02	485	4.54	0.03	205	4.44	0.05	143	4.54	0.05
106	sources of data (e.g., computer or client records)	635	3.84	0.03	487	3.90	0.04	206	3.85	0.06	145	3.94	0.07
107	specific medication names	637	4.21	0.03	489	4.29	0.04	203	4.24	0.06	146	4.33	0.07
108	specimen collection procedure	637	4.20	0.03	485	4.23	0.03	206	4.21	0.06	146	4.31	0.05
109	stages of labor	635	3.39	0.05	484	3.36	0.06	205	3.77	0.08	144	3.60	0.09
110	standard/universal precautions	634	4.79	0.02	486	4.72	0.02	206	4.63	0.04	146	4.82	0.04
111	substance abuse	634	3.89	0.03	482	3.86	0.05	204	4.00	0.07	146	3.93	0.07
112	traction equipment	639	3.55	0.04	483	3.45	0.05	206	3.54	0.08	144	3.63	0.08
113	trade names for medications	636	4.03	0.03	487	4.13	0.04	204	4.06	0.07	144	4.15	0.07
114	treatment options	638	3.81	0.03	484	3.96	0.04	206	3.99	0.06	144	3.85	0.06
115	vital signs	636	4.85	0.02	486	4.80	0.02	206	4.78	0.04	146	4.87	0.03
116	wound care	637	4.46	0.03	487	4.60	0.03	205	4.40	0.05	146	4.55	0.05

APPENDIX L: LABORATORY VALUES SUBGROUP ANALYSIS: PRIMARY JOB TITLE

Preface: Is it important for the newly-licensed LPN/VN to memorize the following laboratory values?

Table L. Laboratory Values Subgroup Analysis: Primary Job Title

Survey position #	Knowledge of	Newly Licensed LPN/VN			LPN/VN Educator			LPN/VN Supervisor		
		N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
1	Normal lab value for BUN (blood, urea, nitrogen)	525	81.5%	0.02	813	75.4%	0.02	243	72.0%	0.03
2	Normal lab value for arterial blood gases (pH_1, PO_2, PCO_2, SaO_2, HCO_3)	524	69.8%	0.02	812	54.6%	0.02	242	36.4%	0.03
3	Normal lab value for cholesterol (total)	520	58.8%	0.02	806	54.6%	0.02	243	39.9%	0.03
4	Normal lab value for glucose	524	95.8%	0.01	817	96.3%	0.01	243	91.4%	0.02
5	Normal lab value for hematocrit (Hct)	523	86.4%	0.01	818	91.1%	0.01	242	81.4%	0.03
6	Normal lab value for hemoglobin (Hgb)	523	88.0%	0.01	817	93.5%	0.01	241	83.4%	0.02
7	Normal lab value for hemoglobin A1C (HbA_1C)	523	62.1%	0.02	809	61.4%	0.02	242	55.0%	0.03
8	Normal lab value for platelets	521	78.5%	0.02	809	75.9%	0.02	237	49.4%	0.03
9	Normal lab value for potassium (K+)	523	90.1%	0.01	817	94.9%	0.01	242	85.5%	0.02
10	Normal lab value for red blood count (RBC)	525	85.0%	0.02	810	70.1%	0.02	242	53.3%	0.03
11	Normal lab value for sodium (Na+)	524	86.6%	0.01	813	86.2%	0.01	243	73.3%	0.03
12	Normal lab value for white blood count (WBC)	525	91.8%	0.01	815	92.5%	0.01	243	81.1%	0.03
13	Normal lab value for albumin (blood)	518	54.6%	0.02	808	30.7%	0.02	242	31.4%	0.03
14	Normal lab value for ALT (SGPT)	521	40.5%	0.02	810	23.0%	0.01	241	23.2%	0.03
15	Normal lab value for ammonia	523	46.8%	0.02	809	22.9%	0.01	243	27.2%	0.03
16	Normal lab value for AST (SGOT)	521	39.7%	0.02	811	23.2%	0.01	239	23.0%	0.03
17	Normal lab value for bilirubin	525	57.0%	0.02	809	28.4%	0.02	240	25.8%	0.03
18	Normal lab value for bleeding time	523	87.0%	0.01	812	59.7%	0.02	242	61.6%	0.03
19	Normal lab value for cholesterol (HDL and LDL)	522	64.6%	0.02	810	46.7%	0.02	239	36.0%	0.03
20	Normal lab value for creatinine	520	71.3%	0.02	812	66.6%	0.02	242	59.1%	0.03
21	Normal lab value for digoxin	520	83.7%	0.02	808	67.5%	0.02	243	64.2%	0.03
22	Normal lab value for ESR	514	47.5%	0.02	809	21.0%	0.01	243	21.8%	0.03
23	Normal lab value for lithium	518	59.8%	0.02	813	27.6%	0.02	243	21.0%	0.03

Table L. Laboratory Values Subgroup Analysis: Primary Job Title										
		Newly Licensed LPN/VN			LPN/VN Educator			LPN/VN Supervisor		
Survey position #	Knowledge of	N	Avg.	Std. Err.	N	Avg.	Std. Err.	N	Avg.	Std. Err.
24	Normal lab value for magnesium	520	58.7%	0.02	808	34.7%	0.02	243	25.9%	0.03
25	Normal lab value for PTT and APTT	521	79.8%	0.02	814	68.8%	0.02	243	56.4%	0.03
26	Normal lab value for phosphorus/phosphate	519	43.5%	0.02	810	17.3%	0.01	243	13.6%	0.02
27	Normal lab value for protein (total)	519	52.8%	0.02	807	24.4%	0.02	240	22.5%	0.03
28	Normal lab value for prothrombin time (PT)	520	88.3%	0.01	812	73.2%	0.02	243	74.1%	0.03
29	Normal lab value for urine (alb, pH, white blood cell count [WBC] and %T lymphocytes [differential])	520	71.5%	0.02	810	44.2%	0.02	243	46.1%	0.03
30	Normal lab value for International Normalized Ratio (INR)	524	82.6%	0.02	814	73.0%	0.02	240	68.3%	0.03

APPENDIX M: LABORATORY VALUES SUBGROUP ANALYSIS: FACILITY

Preface: Is it important for the newly-licensed LPN/VN to memorize the following laboratory values?

Table M. Laboratory Values Subgroup Analysis: Facility

Survey position #	Knowledge of:	Hospital			Long-Term Care			Community-Based Facility			Other		
		N	%	Std. Err.	N	%	Std. Err.	N	%	Std. Err.	N	%	Std. Err.
1	Normal lab value for BUN (blood, urea, nitrogen)	641	74.4	0.02	492	79.9	0.02	207	77.8	0.03	147	78.2	0.03
2	Normal lab value for arterial blood gases (pH, PO_2, PCO_2, SaO_2, HCO_3)	638	55.6	0.02	490	56.3	0.02	207	61.8	0.03	148	54.1	0.04
3	Normal lab value for cholesterol (total)	635	50.9	0.02	488	51.4	0.02	205	62.4	0.03	147	58.5	0.04
4	Normal lab value for glucose	642	95.8	0.01	493	94.3	0.01	207	96.1	0.01	147	96.6	0.02
5	Normal lab value for hematocrit (Hct)	643	90.2	0.01	491	87.4	0.02	206	83.5	0.03	148	90.5	0.02
6	Normal lab value for hemoglobin (Hgb)	642	91.6	0.01	491	89.4	0.01	205	86.8	0.02	148	91.9	0.02
7	Normal lab value for hemoglobin A1C (HbA1C)	636	55.3	0.02	488	66.0	0.02	208	63.0	0.03	147	65.3	0.04
8	Normal lab value for platelets	636	75.3	0.02	486	66.3	0.02	205	74.6	0.03	146	78.8	0.03
9	Normal lab value for potassium (K+)	641	94.5	0.01	491	90.4	0.01	208	84.6	0.03	148	94.6	0.02
10	Normal lab value for red blood count (RBC)	640	67.7	0.02	491	73.9	0.02	206	80.6	0.03	145	77.9	0.03
11	Normal lab value for sodium (Na+)	639	84.7	0.01	491	82.7	0.02	207	82.6	0.03	148	89.2	0.03
12	Normal lab value for white blood count (WBC)	641	91.6	0.01	493	87.6	0.01	207	90.3	0.02	147	95.9	0.02
13	Normal lab value for albumin (blood)	631	30.3	0.02	491	46.2	0.02	204	45.1	0.03	147	40.8	0.04
14	Normal lab value for ALT (SGPT)	635	22.7	0.02	489	32.9	0.02	205	37.1	0.03	148	31.1	0.04
15	Normal lab value for ammonia	637	23.7	0.02	491	37.7	0.02	206	39.3	0.03	147	29.9	0.04
16	Normal lab value for AST (SGOT)	638	22.7	0.02	485	32.8	0.02	205	36.1	0.03	148	30.4	0.04
17	Normal lab value for bilirubin	636	30.2	0.02	488	42.4	0.02	207	47.3	0.03	148	37.2	0.04
18	Normal lab value for bleeding time	639	59.9	0.02	489	78.3	0.02	206	76.7	0.03	148	68.2	0.04
19	Normal lab value for cholesterol (HDL and LDL)	636	41.8	0.02	487	54.8	0.02	206	60.7	0.03	148	60.8	0.04
20	Normal lab value for creatinine	639	65.1	0.02	491	67.8	0.02	204	68.6	0.03	145	70.3	0.04

Table M. Laboratory Values Subgroup Analysis: Facility												
		Hospital			Long-Term Care			Community-Based Facility			Other		
Survey position #	Knowledge of:	N	%	Std. Err.	N	%	Std. Err.	N	%	Std. Err.	N	%	Std. Err.
21	Normal lab value for digoxin	637	68.6	0.02	488	74.8	0.02	204	74.5	0.03	147	74.1	0.04
22	Normal lab value for ESR	637	21.7	0.02	485	35.5	0.02	203	39.4	0.03	146	31.5	0.04
23	Normal lab value for lithium	640	28.3	0.02	487	43.7	0.02	205	47.3	0.03	147	38.1	0.04
24	Normal lab value for magnesium	636	37.6	0.02	489	42.1	0.02	205	47.3	0.03	146	42.5	0.04
25	Normal lab value for PTT and APTT	639	68.9	0.02	491	72.7	0.02	206	69.9	0.03	147	70.7	0.04
26	Normal lab value for phosphorus/phosphate	638	19.0	0.02	488	30.1	0.02	206	32.0	0.03	146	25.3	0.04
27	Normal lab value for protein (total)	638	24.1	0.02	483	39.3	0.02	206	46.6	0.03	145	34.5	0.04
28	Normal lab value for prothrombin time (PT)	638	72.7	0.02	491	84.1	0.02	206	83.0	0.03	145	77.2	0.03
29	Normal lab value for urine (alb, pH, white blood cell count [WBC] and %T lymphocytes [differential])	638	43.7	0.02	489	62.6	0.02	206	61.2	0.03	146	50.7	0.04
30	Normal lab value for International Normalized Ratio (INR)	637	73.3	0.02	493	82.2	0.02	207	70.0	0.03	146	75.3	0.04

APPENDIX N: KNOWLEDGE SURVEY NONRESPONDER STUDY

Introduction

NCSBN conducted a knowledge statement survey to assess the knowledge newly-licensed nurses needed to possess for safe and effective professional practice. The purpose of the study was to inform NCLEX item development. The overall response rate for the 2009 LPN/VN Nursing Knowledge Survey was more than 26.0%. Of the 6,350 Newly Licensed LPN/VNs, LPN/VN Educators and LPN/VN Supervisors who were invited to take the survey, 1,595 completed and returned the survey. NCSBN made the decision to contact a sample of the nurses who did not respond to the survey, in order to determine if the results of the 2009 knowledge survey could be biased. If there was a systematic difference in the ratings of the knowledge statement between responders and nonresponders, then the results could potentially be biased. Ruling out the potential for systematic differences among raters supports the validity of the results. Additionally, NCSBN wanted to assess the reasons nonresponders did not return the survey, in order to increase response rates in future studies.

Methodology

Sample Selection

A random sample of 30 Newly Licensed LPN/VNs, 30 LPN/VN Educators and 30 LPN/VN Supervisors who were invited, but did not respond to the 2009 LPN/VN Nursing Knowledge Survey, were contacted via telephone.

Telephone Interview Process

Nonresponders were contacted via telephone by a vendor, using telephone numbers provided by NCSBN. Nonresponders were first asked about their reasons for not completing the 2009 LPN/VN Nursing Knowledge Survey. To facilitate the gathering of data from nonresponders, NCSBN used prior research to develop a list of possible reasons why invitees may not have responded to the survey. These reasons included: too busy, did not care, do not like/trust surveys, did not receive it, and other. If the nonresponder answered other, they were asked to provide their own reason. Next, in order to provide background information on nonresponders, individuals were asked for employment setting/specialty and length of time in their current position. In addition, responders were asked to rate 17 knowledge statements that were listed in the 2009 LPN/VN Nursing Knowledge Survey. Responders were thanked for their time and responses were recorded in a Microsoft Excel 2007 spreadsheet.

Return Rates

Of the nonresponders who were potential contacts, 90 individuals participated in the study: 30 Newly Licensed LPN/VNs, 30 LPN/VN Educators and 30 LPN/VN Supervisors.

Nonresponder Results

Reasons for Not Responding

Reasons for not responding were as follows: 39 respondents (43.3%) did not receive the survey, 29 respondents (32.2%) were too busy, and 22 respondents (24.4%) listed other reasons. None of the participants indicated that they do not like/trust surveys or that they did not care as a reason for not returning the survey. See Figure N-1 for the results.

Time at Your Current Position

Responders were asked how many months they had been in their current position. Responders who were Newly Licensed LPN/VNs averaged 6.9 months at their job compared to nonresponders who were asked later in the survey process and averaged 11.6 months on the job. Nonresponder LPN/VN Educators actually had been in their current positions longer than responder LPN/VN Educators; 146.8 months (12.2 years) compared to 105.1 months (8.8 years). Nonresponder LPN/VN Supervisors spent an average of 87.5 months (7.3 years) at their job, less than half the average time (191.4 months or 16.0 years) for responder LPN/VN Supervisors job title. Figure N-2 presents the average months at position by job title.

Figure N-1. Reasons For Not Responding

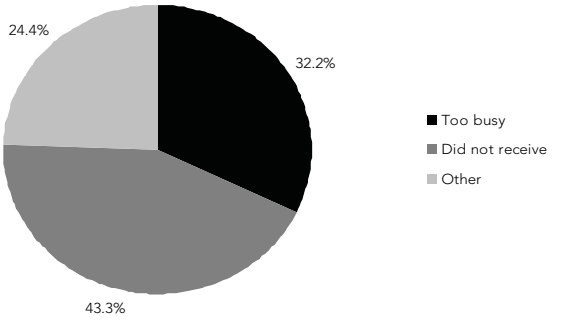
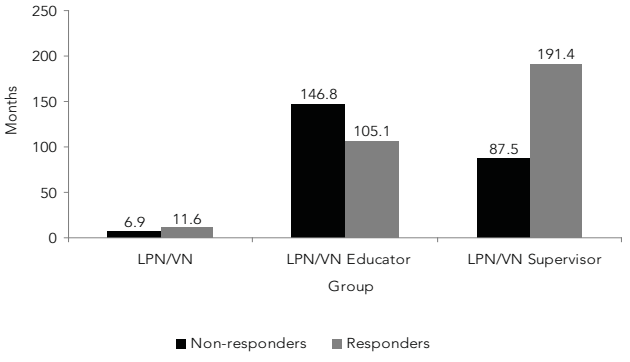


Figure N-2. Months at Position by Job Title



Employment Setting/Specialty

Nonresponders were asked to provide their employment setting/specialty area. Similar to responders, the largest percentage of Newly Licensed LPN/VN nonresponders listed their employment setting/specialty area as nursing home (40.0% for nonresponders and 46.9% for responders). Nonresponder LPN/VN Educators overwhelmingly chose the other category and indicated their specialty was in education (76.7%), while responder LPN/VN Educators chose medical-surgical unit as their area of specialty (57.5%). The majority of nonresponder LPN/VN Supervisors chose home health as the most frequent employment setting (43.3%), while nursing home was the most popular setting for responders in this primary job title (50.8%).

Differences between nonresponder and responder results could potentially be due to the classification of setting by the vendor. See Tables N-1 and N-2 for responder and nonresponder employment setting information for each primary job title.

Importance Ratings

Importance ratings of the knowledge statements were provided by the nonresponders and compared to the average rating of the same knowledge statements by survey responders. Overall, nonresponders and responders had similar ratings of knowledge statements. Table N-3 contains the results of the comparison of average importance ratings for responders and nonresponders.

Summary

This study found that responders and nonresponders rated the importance of 17 knowledge statements quite similarly. These findings suggest that there are no systematic differences in ratings between the two groups that could bias the results of the study. This lends support to the validity of the findings from the 2009 LPN/VN Nursing Knowledge Survey. Additionally, the findings suggest that individuals did not complete the study because they were either too busy or did not receive the survey. Overall, these results provide important information on the validity of the 2009 LPN/VNs Nursing Knowledge Survey and why individuals do not complete surveys.

Table N-1. Employment Setting/Specialty for Responders and Nonresponders

	Responders						Nonresponders					
	Newly Licensed LPN/VN		LPN/VN Educator		LPN/VN Supervisor		Newly Licensed LPN/VN		LPN/VN Educator		LPN/VN Supervisor	
Employment setting	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Critical care	15	2.8	49	6.0	26	10.6	2	6.7	1	3.3	3	10.0
Medical-surgical unit	57	10.8	473	57.5	60	24.4	1	3.3	3	10.0	4	13.3
Pediatrics	15	2.8	70	8.5	10	4.1	3	10.0	1	3.3	0	0.0
Nursery	2	0.4	48	5.8	4	1.6	0	0.0	0	0.0	3	10.0
Labor and delivery	3	0.6	69	8.4	5	2.0	0	0.0	0	0.0	3	10.0
Postpartum unit	6	1.1	106	12.9	7	2.8	0	0.0	1	3.3	3	10.0
Psychiatry	26	4.9	58	7.1	8	3.3	2	6.7	2	6.7	1	3.3
Operating room	7	1.3	13	1.6	3	1.2	0	0.0	0	0.0	3	10.0
Assisted living	58	11.0	7	0.9	4	1.6	1	3.3	1	3.3	0	0.0
Nursing home	247	46.9	295	35.9	125	50.8	12	40.0	1	3.3	5	16.7
Other long-term care	59	11.2	21	2.6	2	0.8	6	20.0	1	3.3	4	13.3
Rehabilitation	89	16.9	44	5.4	31	12.6	2	6.7	1	3.3	6	20.0
Subacute unit	19	3.6	29	3.5	21	8.5	0	0.0	0	0.0	0	0.0
Transitional care unit	16	3.0	10	1.2	7	2.8	1	3.3	0	0.0	1	3.3
Physician/Dentist office	21	4.0	8	1.0	1	0.4	0	0.0	0	0.0	1	3.3
Occupational health	3	0.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Outpatient clinic	21	4.0	10	1.2	2	0.8	0	0.0	0	0.0	0	0.0
Home health	57	10.8	10	1.2	39	15.9	0	0.0	0	0.0	13	43.3
Public health	9	1.7	3	0.4	0	0.0	1	3.3	0	0.0	3	10.0
Student/School health	6	1.1	23	2.8	2	0.8	0	0.0	0	0.0	0	0.0
Hospice care	25	4.7	14	1.7	10	4.1	0	0.0	0	0.0	1	3.3
Prison	12	2.3	4	0.5	0	0.0	0	0.0	0	0.0	0	0.0
Other	48	9.1	92	11.2	14	5.7	1	3.3	23	76.7	0	0.0

Table N-2. Nonresponder Employment Setting by Primary Job Title

	Nonresponders					
	Newly Licensed LPN/VN		LPN/VN Educator		LPN/VN Supervisor	
Employment setting	N	%	N	%	N	%
Critical care	2	6.7	1	3.3	3	10.0
Medical-surgical unit	1	3.3	3	10.0	4	13.3
Pediatrics	3	10.0	1	3.3	0	0.0
Nursery	0	0.0	0	0.0	3	10.0
Labor and delivery	0	0.0	0	0.0	3	10.0
Postpartum unit	0	0.0	1	3.3	3	10.0
Psychiatry	2	6.7	2	6.7	1	3.3
Operating room	0	0.0	0	0.0	3	10.0
Assisted living	1	3.3	1	3.3	0	0.0
Nursing home	12	40.0	1	3.3	5	16.7
Other long-term care	6	20.0	1	3.3	4	13.3
Rehabilitation	2	6.7	1	3.3	6	20.0
Subacute unit	0	0.0	0	0.0	0	0.0
Transitional care unit	1	3.3	0	0.0	1	3.3
Physician/Dentist office	0	0.0	0	0.0	1	3.3
Occupational health	0	0.0	0	0.0	0	0.0
Outpatient clinic	0	0.0	0	0.0	0	0.0
Home health	0	0.0	0	0.0	13	43.3
Public health	1	3.3	0	0.0	3	10.0
Student/School health	0	0.0	0	0.0	0	0.0
Hospice care	0	0.0	0	0.0	1	3.3
Prison	0	0.0	0	0.0	0	0.0
Other	1	3.3	23	76.7	0	0.0

Table N-3. Nonresponder Employment Setting by Primary Job Title

Knowledge of	Responder Rating	Nonresponder Rating	Knowledge of:	Responder Rating	Nonresponder Rating
client rights	4.56 (N=1,565)	4.84 (N=89)	confidentiality	4.75 (N=1,570)	4.97 (N=89)
standard/universal precautions	4.75 (N=1,569)	4.96 (N=89)	disease processes	4.39 (N=1,572)	4.63 (N=89)
human growth and development	3.91 (N=1,574)	4.16 (N=89)	drug classifications	4.37 (N=1,570)	4.55 (N=89)
communication techniques	4.23 (N=1,570)	4.73 (N=89)	infection control	4.75 (N=1,562)	4.90 (N=89)
nutrition	4.17 (N=1,577)	4.40 (N=89)	isolation equipment/supplies	4.37 (N=1,571)	4.63 (N=89)
rights of medication administration	4.79 (N=1,572)	4.99 (N=89)	pharmacology	4.49 (N=1,569)	4.71 (N=89)
vital signs	4.83 (N=1,571)	4.96 (N=89)	restraints (e.g., chemical or physical)	4.19 (N=1,570)	4.42 (N=89)
emergency procedures/ equipment	4.57 (N=1,573)	4.65 (N=89)	scope of practice	4.65 (N=1,572)	4.88 (N=89)
aseptic and sterile techniques	4.80 (N=1,567)	4.85 (N=89)			

APPENDIX O: LINKING OF KNOWLEDGE STATEMENTS AND ACTIVITY STATEMENTS

*Appendix O was developed by the SME panelists and does not reflect the final knowledge statement and categorization

Linking of Knowledge Statements and Activity Statements
1. Coordinated Care
Use data from various sources in making clinical decisions
sources of data (e.g., computer or client records)
data access
evidence-based practice
interdisciplinary team
safe hand-off/ reporting process
Contribute to the development and/or update of the client plan of care
interdisciplinary team
safe hand-off/ reporting process
client diagnoses/prognosis
client goals
psychosocial dynamics
care planning process
Assign client care and/or related tasks (i.e., assistive personnel or LPN/LVN)
scope of practice
rules of delegation/assignment
assistive personnel
safe hand-off/ reporting process
client condition
Organize and prioritize care for assigned group of clients
safe hand-off/ reporting process
client diagnoses/prognosis
level of acuity
coordination of care
Recognize and report staff conflict
chain of command
conflict resolution
communication techniques
Advocate for client rights and needs
facility resources
community resources
patient bill of rights
treatment options
cultural/religious beliefs or practices
Promote client self-advocacy
cultural/religious beliefs or practices
client education
client condition

Linking of Knowledge Statements and Activity Statements
Participate in quality improvement (QI) activity (e.g., collecting data or serving on QI committee)
documentation
error/occurrence reporting
data collection and analysis
chart review
Involve client in care decision-making
client education
treatment options
client condition
client goals
Follow-up with client after discharge
communication techniques
continuity of care
Participate in staff education
education opportunities
learning styles
evidence-based practice
scope of practice
Participate in orientation of new employee
scope of practice
learning styles
communication techniques
evaluation techniques
documentation
Recognize task/assignment you are not prepared to perform and seek assistance
scope of practice
chain of command
communication techniques
personal limitations
assistive resources (e.g., staff or equipment)
Respond to the unsafe practice of a health care provider (e.g., intervene or report)
scope of practice
chain of command
documentation
conflict resolution
communication techniques
licensing agency
evidence-based practice
Participate in client discharge or transfer
medication reconciliation
coordination of care
safe hand-off/ reporting process
community resources
client diagnoses/prognosis

Linking of Knowledge Statements and Activity Statements
client education
anticipated client goals/outcomes
admission process
Receive and process health care provider orders
documentation
accepted abbreviations
evidence-based practice
scope of practice
client medical history
procedure for processing orders (e.g., verbal, written or telephone)
Follow regulation/policy for reporting specific issues (e.g., abuse, neglect, gunshot wound or communicable disease)
reporting agencies
documentation
client rights
confidentiality
Participate in client consent process
confidentiality
client consent
client education
documentation
admission process
Maintain client confidentiality
confidentiality
HIPAA
patient bill of rights
Provide for privacy needs
confidentiality
HIPAA
patient bill of rights
cultural/religious beliefs or practices
personal privacy
Provide information about advance directives
community resources
advance directives
admission process
facility resources
client education
Perform telephone triage
evidence-based practice
disease processes
communication techniques
data collection and analysis
scope of practice
Use information technology in client care

Linking of Knowledge Statements and Activity Statements
sources of data (e.g., computer or client records)
data access
interdisciplinary team
confidentiality
HIPAA
patient bill of rights
Apply evidence-based practice when providing care
evidence-based practice
facility resources
community resources
client diagnoses/prognosis
education opportunities
Participate as a member of an interdisciplinary team
communication techniques
interdisciplinary process
safe hand-off/ reporting process
client diagnoses/prognosis
client goals
Supervise/evaluate activities of assistive personnel
scope of practice
chain of command
evaluation techniques
leadership and management skills
communication techniques
conflict resolution
Organize activities in cost-effective manner
fiscal responsibility
inventory control
Participate in client referral process
referral process
facility resources
community resources
disease processes
insurance requirements
Give and receive report
safe hand-off/ reporting process
communication techniques
documentation
client condition
client medical history
confidentiality
2. Safety & Infection Control
Assure availability and safe functioning of medical equipment
reporting process for defective equipment

Linking of Knowledge Statements and Activity Statements
inventory evaluation
proper use and maintenance of equipment
equipment education (e.g., new or existing)
Evaluate the appropriateness of order for client
disease processes
client diagnoses/prognosis
client medical history
data collection and analysis
evidence-based practice
Verify the identity of client
client identifiers
confidentiality
client medical records
Use proper body mechanics
transfer/positioning equipment
body mechanics
personal limitations
client abilities
Use standard/universal precautions
infection control
client diagnoses/prognosis
supplies
Identify client allergies and intervene as appropriate
client medical history
data collection and analysis
signs and symptoms of allergic reaction
emergency procedures/equipment
Participate in preparation for internal and external disasters (e.g, fire or natural disaster)
continuing education
emergency procedures/equipment
Identify and address hazardous conditions in care environment (e.g., chemical, smoking or biohazard)
continuing education
emergency procedures/equipment
location of MSDS
storage location of hazardous material
disposal of hazardous material
hazardous conditions
personal protective equipment
Implement least restrictive restraints or seclusion
restraint (e.g., chemical or physical)
seclusion procedures
documentation
client medical history
facility resources

Linking of Knowledge Statements and Activity Statements
Use aseptic and sterile techniques
aseptic and sterile techniques
infection control
Follow protocol for timed client monitoring (e.g., suicide precautions, restraint/seclusion or safety checks)
documentation
restraint (e.g., chemical or physical)
seclusion procedures
emergency procedures/equipment
client medical history
Assist in or reinforce education to client about safety precautions
client education
disease processes
learning styles
documentation
cultural/religious beliefs or practices
client medical history
Search client belongings when indicated
admission process
patient bill of rights
confidentiality
documentation
safety concerns
Identify the need for and implement appropriate isolation techniques
isolation equipment/supplies
types of isolation
client diagnoses/prognosis
signs and symptoms of communicable disease
Initiate and participate in security response (e.g., infant abduction or flight risk)
emergency procedures/equipment
safety concerns
facility resources
3. Health Promotion and Maintenance
Provide care and resources for beginning of life and/or end of life issues and choices
community resources
client diagnoses/prognosis
cultural/religious beliefs or practices
treatment options
human growth and development
advance directives
facility resources
psychosocial dynamics
Assist with fetal heart monitoring for the antepartum client
fetal monitoring
scope of practice

Linking of Knowledge Statements and Activity Statements
client medical history
critical signs and symptoms
anatomy/physiology
Provide care that meets the special needs of the newborn - less than 1 month old
human growth and development
facility resources
community resources
client education
communication techniques
client rights
confidentiality
cultural/religious beliefs or practices
psychosocial dynamics
Provide care that meets the special needs of infants or children aged 1 month to 12 years
human growth and development
facility resources
community resources
client education
learning styles
communication techniques
client rights
confidentiality
cultural/religious beliefs or practices
psychosocial dynamics
Provide care that meets the special needs of adolescents aged 13 to 18 years
human growth and development
facility resources
community resources
client education
client rights
confidentiality
learning styles
communication techniques
cultural/religious beliefs or practices
psychosocial dynamics
Provide care that meets the special needs of young adults aged 19 to 30 years
human growth and development
facility resources
community resources
client education
learning styles
communication techniques
client rights
confidentiality

Linking of Knowledge Statements and Activity Statements
cultural/religious beliefs or practices
psychosocial dynamics
Provide care that meets the special needs of adults aged 31 to 64 years
human growth and development
facility resources
community resources
client education
learning styles
communication techniques
client rights
confidentiality
cultural/religious beliefs or practices
psychosocial dynamics
Provide care that meets the special needs of clients aged 65 to 85 years of age
human growth and development
facility resources
community resources
client education
learning styles
communication techniques
client rights
confidentiality
cultural/religious beliefs or practices
psychosocial dynamics
Provide care that meets the special needs of clients aged greater than 85 years of age
human growth and development
facility resources
community resources
client education
learning styles
communication techniques
client rights
confidentiality
cultural/religious beliefs or practices
psychosocial dynamics
Assist with monitoring a client in labor
human growth and development
stages of labor
scope of practice
documentation
cultural/religious beliefs or practices
client medical history
data collection and analysis
critical signs and symptoms

Linking of Knowledge Statements and Activity Statements
Monitor recovery of stable postpartum client
human growth and development
scope of practice
documentation
cultural/religious beliefs or practices
client medical history
facility resources
community resources
data collection and analysis
critical signs and symptoms
Compare client development to norms
human growth and development
documentation
data collection and analysis
community resources
Assist client with expected life transition (e.g., attachment to newborn, parenting or retirement)
community resources
human growth and development
facility resources
client education
cultural/religious beliefs or practices
Discuss sexual issues with client (e.g., family planning, menopause or erectile dysfunction)
communication techniques
human growth and development
cultural/religious beliefs or practices
client education
facility resources
community resources
confidentiality
Participate in health screening or health promotion programs
communication techniques
human growth and development
cultural/religious beliefs or practices
client education
facility resources
community resources
Provide information for prevention of high risk behaviors
communication techniques
human growth and development
cultural/religious beliefs or practices
client education
facility resources
community resources
confidentiality

Linking of Knowledge Statements and Activity Statements
client rights
high risk behaviors
Recognize barriers to communication or learning
client education
learning styles
communication barriers (e.g., hearing or language)
cultural/religious beliefs or practices
communication techniques
Collect data for health history
client medical history
communication techniques
documentation
Collect baseline physical data (e.g., skin integrity or height and weight)
physical inspection and data collection
documentation
communication techniques
confidentiality
assessment equipment
cultural/religious beliefs or practices
Identify and educate clients in need of immunizations (required and voluntary)
human growth and development
immunization types and recommendations
cultural/religious beliefs or practices
client medical history
client education
learning styles
communication barriers (e.g., hearing or language)
documentation
communication techniques
4. Psychosocial Integrity
Provide emotional support to client and family
communication techniques
facility resources
community resources
cultural/religious beliefs or practices
confidentiality
psychosocial dynamics
Collect data regarding client psychological and social status
data collection and analysis
admission process
communication techniques
confidentiality
psychosocial dynamics
client condition

Linking of Knowledge Statements and Activity Statements
Identify client use of effective and ineffective coping mechanisms
communication techniques
coping mechanisms
cultural/religious beliefs or practices
documentation
data collection and analysis
psychosocial dynamics
Promote client positive self-esteem
communication techniques
coping mechanisms
cultural/religious beliefs or practices
client education
documentation
data collection and analysis
human growth and development
psychosocial dynamics
Identify significant body or life-style changes and other stressors that may affect recovery/health maintenance
communication techniques
coping mechanisms
cultural/religious beliefs or practices
documentation
data collection and analysis
human growth and development
facility resources
community resources
psychosocial dynamics
Collect data on client potential for violence
data collection and analysis
documentation
cultural/religious beliefs or practices
facility resources
community resources
admission process
coping mechanisms
safety concerns
emergency procedures/equipment
communication techniques
psychosocial dynamics
Identify signs and symptoms of substance abuse/chemical dependency, withdrawal or toxicity
admission process
data collection and analysis
critical signs and symptoms
emergency procedures/equipment
safety concerns

Linking of Knowledge Statements and Activity Statements
communication techniques
substance abuse
psychosocial dynamics
Assist in or reinforce education to caregivers/family on ways to manage client with behavioral disorders
facility resources
community resources
client education
communication techniques
human growth and development
documentation
psychosocial dynamics
Participate in behavior management program by recognizing environmental stressors and/or providing therapeutic environment
communication techniques
coping mechanisms
cultural/religious beliefs or practices
client education
documentation
data collection and analysis
psychosocial dynamics
Explore why client is refusing or not following treatment plan
communication techniques
coping mechanisms
cultural/religious beliefs or practices
documentation
data collection and analysis
facility resources
client diagnoses/prognosis
psychosocial dynamics
Participate in client group session
communication techniques
coping mechanisms
cultural/religious beliefs or practices
client education
documentation
data collection and analysis
facility resources
client diagnoses/prognosis
human growth and development
psychosocial dynamics
Make adjustment to care with consideration of client spiritual or cultural beliefs
cultural/religious beliefs or practices
facility resources
community resources
communication techniques

Linking of Knowledge Statements and Activity Statements
documentation
data collection and analysis
Assist in managing the care of angry/agitated client
communication techniques
coping mechanisms
emergency procedures/equipment
safety concerns
chain of command
conflict resolution
facility resources
community resources
client diagnoses/prognosis
psychosocial dynamics
Participate in reminiscence therapy, validation therapy or reality orientation
communication techniques
documentation
facility resources
client diagnoses/prognosis
client medical history
Assist in the care of the cognitively impaired client
communication techniques
documentation
facility resources
client diagnoses/prognosis
client medical history
safety concerns
learning styles
Assist client to cope/adapt to stressful events and changes in health status (e.g., end-of-life, grief and loss, life changes or physical changes)
communication techniques
documentation
facility resources
client diagnoses/prognosis
client medical history
safety concerns
learning styles
coping mechanisms
community resources
cultural/religious beliefs or practices
Use therapeutic communication techniques with client
communication techniques
learning styles
coping mechanisms
cultural/religious beliefs or practices

Linking of Knowledge Statements and Activity Statements
facility resources
client diagnoses/prognosis
Provide support for clients with sexuality issues (e.g., gender identity)
facility resources
community resources
safety concerns
coping mechanisms
cultural/religious beliefs or practices
communication techniques
psychosocial dynamics
5. Basic Care and Comfort
Use transfer assistive devices (e.g., t-belt, slide board or mechanical lift)
body mechanics
transfer/positioning equipment
personal limitations
client abilities
safety concerns
client diagnoses/prognosis
assistive resources (e.g., staff or equipment)
Use alternative/complementary therapy (e.g., acupressure, music therapy or herbal therapy) in providing client care
alternative/complementary therapy
cultural/religious beliefs or practices
client education
facility resources
documentation
data collection and analysis
client medical history
Provide for mobility needs (e.g., ambulation, range of motion, transfer to chair, repositioning or the use of adaptive equipment)
body mechanics
transfer/positioning equipment
personal limitations
client abilities
safety concerns
client diagnoses/prognosis
assistive resources (e.g., staff or equipment)
client education
documentation
Provide feeding and/or care for client with enteral tubes
enteral tubes
safety concerns
client diagnoses/prognosis
emergency procedures/equipment
client positioning
client education

Linking of Knowledge Statements and Activity Statements
nutrition
feeding equipment/pumps
documentation
anatomy/physiology
vital signs
assistive resources (e.g., staff or equipment)
Monitor and provide for nutritional needs of client (e.g., labs, calorie counts/percentages or daily weight)
intake/output
nutrition
lab values
weight
human growth and development
documentation
client education
communication techniques
client diagnoses/prognosis
client medical history
cultural/religious beliefs or practices
data collection and analysis
Provide non-pharmacological measures for pain relief (e.g., imagery, massage or repositioning)
alternative/complementary therapy
client education
documentation
communication techniques
coping mechanisms
cultural/religious beliefs or practices
data collection and analysis
pain scales
facility resources
human growth and development
Assist with activities of daily living
coping mechanisms
cultural/religious beliefs or practices
data collection and analysis
client diagnoses/prognosis
client education
documentation
client abilities
assistive personnel
human growth and development
Institute bowel or bladder management to improve client elimination
client education
human growth and development
client medical history

Linking of Knowledge Statements and Activity Statements
retraining program
data collection and analysis
documentation
client abilities
intake/output
nutrition
anatomy/physiology
proper use and maintenance of equipment
Evaluate pain using a rating scale
human growth and development
client education
data collection and analysis
communication techniques
documentation
anatomy/physiology
pain scales
Provide measures to promote sleep/rest
client positioning
data collection and analysis
communication techniques
alternative/complementary therapy
disease processes
client medical history
client education
facility resources
cultural/religious beliefs or practices
community resources
pharmacology
Use measures to maintain or improve client skin integrity
client positioning
anatomy/physiology
safety concerns
documentation
client education
assistive resources (e.g., staff or equipment)
nutrition
pressure reduction
critical signs and symptoms
infection control
risk factors for skin breakdown
Discontinue or remove peripheral intravenous (IV) line, naso-gastric (NG) tube or urinary catheter
anatomy/physiology
removal procedures (e.g., peripheral intravenous (IV) line, naso-gastric (NG) tube or urinary catheter)
safety concerns

Linking of Knowledge Statements and Activity Statements
client education
infection control
aseptic and sterile techniques
documentation
scope of practice
Perform an irrigation of urinary catheter, bladder, wound, ear, nose or eye
scope of practice
anatomy/physiology
safety concerns
client education
infection control
documentation
client positioning
aseptic and sterile techniques
irrigation procedures
Provide care to client in traction
anatomy/physiology
human growth and development
documentation
client education
client positioning
pain management
coping mechanisms
communication techniques
traction equipment
data collection and analysis
skin integrity
Apply or remove immobilizing equipment (e.g., a splint or brace)
immobilizing equipment
anatomy/physiology
human growth and development
documentation
client education
client positioning
pain management
coping mechanisms
skin integrity
communication techniques
Assist in providing post-mortem care
cultural/religious beliefs or practices
coping mechanisms
infection control
facility resources
community resources

Linking of Knowledge Statements and Activity Statements
Assist in the care and comfort for a client with a visual and/or hearing impairment
communication techniques
facility resources
learning styles
safety concerns
coping mechanisms
client education
Monitor client hydration status and intake/output
documentation
nutrition
data collection and analysis
client diagnoses/prognosis
lab values
6. Pharmacological Therapies
Follow the rights of medication administration
rights of medication administration
Reconcile and maintain current, accurate medication list or medication administration record (MAR)
documentation
trade names for medications
generic drug names
drug classifications
specific medication names
data collection and analysis
client diagnoses/prognosis
client medical history
Monitor transfusion of blood product
data collection and analysis
scope of practice
vital signs
critical signs and symptoms
client medical history
emergency procedures/equipment
documentation
rights of medication administration
Monitor and maintain client intravenous (IV) site and flow rate
data collection and analysis
scope of practice
vital signs
critical signs and symptoms
client medical history
emergency procedures/equipment
documentation
infection control
skin integrity

Linking of Knowledge Statements and Activity Statements
assistive resources (e.g., staff or equipment)
rights of medication administration
Administer medication by oral route
data collection and analysis
scope of practice
vital signs
critical signs and symptoms
client medical history
emergency procedures/equipment
documentation
infection control
assistive resources (e.g., staff or equipment)
drug interactions
rights of medication administration
communication techniques
pharmacology
Administer a subcutaneous (SQ), intradermal or intramuscular (IM) medication
data collection and analysis
scope of practice
vital signs
critical signs and symptoms
client medical history
emergency procedures/equipment
documentation
infection control
assistive resources (e.g., staff or equipment)
drug interactions
rights of medication administration
communication techniques
pharmacology
skin integrity
safety concerns
anatomy/physiology
Administer a medication by a route other than oral, injectable or intravenous (IV) (e.g., enteral tube, rectal or transdermal)
data collection and analysis
scope of practice
vital signs
critical signs and symptoms
client medical history
emergency procedures/equipment
documentation
infection control
assistive resources (e.g., staff or equipment)
drug interactions

Linking of Knowledge Statements and Activity Statements
rights of medication administration
communication techniques
pharmacology
skin integrity
safety concerns
anatomy/physiology
Count narcotics/controlled substances
documentation
facility policy
Regulate client intravenous (IV) rate
pharmacology
drug interactions
documentation
critical signs and symptoms
scope of practice
data collection and analysis
proper use and maintenance of equipment
rights of medication administration
Administer intravenous piggy back (secondary) medications
pharmacology
drug interactions
documentation
critical signs and symptoms
scope of practice
data collection and analysis
proper use and maintenance of equipment
rights of medication administration
Start peripheral intravenous (IV) access
skin integrity
documentation
scope of practice
proper use and maintenance of equipment
anatomy/physiology
human growth and development
client diagnoses/prognosis
client medical history
aseptic and sterile techniques
communication techniques
Evaluate client response to medication
drug interactions
documentation
critical signs and symptoms
data collection and analysis
human growth and development

Linking of Knowledge Statements and Activity Statements
client medical history
communication techniques
signs and symptoms of allergic reaction
pharmacology
Reinforce education to client regarding medications
client education
pharmacology
learning styles
communication techniques
documentation
Maintain medication safety practices (e.g, storage, checking for expiration dates or compatibility)
rights of medication administration
pharmacology
drug interactions
safety concerns
emergency procedures/equipment
documentation
facility policy
Perform calculations needed for medication administration
pharmacology
drug calculations
7. Reduction of Risk Potential
Perform risk monitoring (e.g., sensory impairment, potential for falls or level of mobility)
client medical history
client diagnoses/prognosis
human growth and development
pharmacology
environment
restraint (e.g., chemical or physical)
skin integrity
client positioning
Provide appropriate follow-up after incident (e.g., fall, client elopement or medication error)
communication techniques
client compliance
continuity of care
documentation
chain of command
vital signs
emergency procedures/equipment
Perform bladder scan
proper use and maintenance of equipment
client medical history
documentation
anatomy/physiology

Linking of Knowledge Statements and Activity Statements
communication techniques
Insert urinary catheter
proper use and maintenance of equipment
client medical history
documentation
anatomy/physiology
communication techniques
client positioning
aseptic and sterile techniques
Collect specimen (e.g., urine, stool, gastric contents or sputum for diagnostic testing)
infection control
documentation
client education
specimen collection procedure
Monitor continuous or intermittent suction of naso-gastric (NG) tube
infection control
documentation
proper use and maintenance of equipment
intake/output
Monitor diagnostic or laboratory test results
lab values
documentation
facility resources
client diagnoses/prognosis
client medical history
Insert naso-gastric (NG) tube
proper use and maintenance of equipment
client medical history
documentation
anatomy/physiology
client education
communication techniques
aseptic and sterile techniques
scope of practice
naso-gastric (NG) procedure
Identify signs or symptoms of potential prenatal complications
critical signs and symptoms
client medical history
human growth and development
safety concerns
cultural/religious beliefs or practices
documentation
Take client vital signs
vital signs

Linking of Knowledge Statements and Activity Statements
documentation
communication techniques
anatomy/physiology
proper use and maintenance of equipment
Perform neurological checks
anatomy/physiology
client medical history
client diagnoses/prognosis
documentation
proper use and maintenance of equipment
communication techniques
Perform circulatory checks
anatomy/physiology
client medical history
client diagnoses/prognosis
documentation
proper use and maintenance of equipment
communication techniques
Implement measures to manage/prevent complication of client condition or procedure (e.g., circulatory complication, seizure, aspiration or potential neurological disorder)
communication techniques
client education
continuity of care
documentation
chain of command
vital signs
emergency procedures/equipment
critical signs and symptoms
data collection and analysis
safety concerns
Provide intra-operative care (e.g., positioning client for surgery, maintaining sterile field or providing operative observation)
client diagnoses/prognosis
client positioning
aseptic and sterile techniques
infection control
data collection and analysis
scope of practice
vital signs
emergency procedures/equipment
Evaluate client respiratory status (e.g., breath sounds, rate or measuring oxygen (O2) saturation)
proper use and maintenance of equipment
client medical history
documentation
anatomy/physiology

Linking of Knowledge Statements and Activity Statements
communication techniques
emergency procedures/equipment
lab values
Perform an electrocardiogram (EKG/ECG)
anatomy/physiology
client medical history
client diagnoses/prognosis
documentation
proper use and maintenance of equipment
communication techniques
Assist with the performance of an invasive procedure by setting up sterile field and equipment or providing other assistance
client diagnoses/prognosis
client positioning
aseptic and sterile techniques
infection control
scope of practice
vital signs
Perform venipuncture for blood draws
skin integrity
documentation
scope of practice
proper use and maintenance of equipment
anatomy/physiology
human growth and development
client medical history
aseptic and sterile techniques
communication techniques
specimen collection procedure
standard/universal precautions
safety concerns
Administer and check proper use of compression stockings/sequential compression devices (SCD)
proper use and maintenance of equipment
anatomy/physiology
documentation
skin integrity
client education
8. Physiological Adaptation
Reinforce education to client regarding care and condition
communication techniques
documentation
disease processes
client abilities
learning styles
facility resources

Linking of Knowledge Statements and Activity Statements
community resources
Provide care for client drainage device (e.g., wound drain or chest tube)
infection control
anatomy/physiology
documentation
skin integrity
data collection and analysis
client education
emergency procedures/equipment
communication techniques
Remove client wound drainage device
infection control
anatomy/physiology
documentation
skin integrity
data collection and analysis
client education
emergency procedures/equipment
communication techniques
biohazardous waste
scope of practice
client identifiers
Identify/intervene to control signs of hypoglycemia or hyperglycemia
documentation
data collection and analysis
emergency procedures/equipment
lab values
client medical history
pharmacology
client education
scope of practice
facility resources
Provide cooling/warming measures to restore normal temperature
client diagnoses/prognosis
emergency procedures/equipment
documentation
data collection and analysis
client medical history
Perform wound care and/or dressing change
assistive resources (e.g., staff or equipment)
aseptic and sterile techniques
infection control
biohazardous waste
skin integrity

Linking of Knowledge Statements and Activity Statements
wound care
anatomy/physiology
client identifiers
documentation
Respond to a life-threatening situation
emergency procedures/equipment
documentation
data collection and analysis
client medical history
communication techniques
facility resources
advance directives
Intervene to improve client respiratory status (e.g., breathing treatment, suctioning or repositioning)
facility resources
client medical history
anatomy/physiology
client positioning
proper use and maintenance of equipment
emergency procedures/equipment
client education
documentation
data collection and analysis
aseptic and sterile techniques
Provide care for a client with a tracheostomy
facility resources
client medical history
anatomy/physiology
client positioning
proper use and maintenance of equipment
emergency procedures/equipment
client education
documentation
data collection and analysis
aseptic and sterile techniques
infection control
skin integrity
scope of practice
Identify and treat a client intravenous (IV) line infiltration
signs and symptoms of intravenous (IV) line infiltration
treatment options
documentation
skin integrity
infection control
removal procedures (e.g., peripheral intravenous (IV) line, naso-gastric (NG) tube or urinary catheter)

Linking of Knowledge Statements and Activity Statements
Remove wound sutures or staples
documentation
skin integrity
infection control
removal procedures (e.g., peripheral intravenous (IV) line, naso-gastric (NG) tube or urinary catheter)
supplies
aseptic and sterile techniques
Provide care to client on ventilator
facility resources
client medical history
anatomy/physiology
client positioning
proper use and maintenance of equipment
emergency procedures/equipment
client education
documentation
data collection and analysis
aseptic and sterile techniques
infection control
skin integrity
scope of practice
Perform check of client pacemaker
scope of practice
anatomy/physiology
documentation
data collection and analysis
proper use and maintenance of equipment
Perform care for client before or after diagnostic/surgical procedure
data collection and analysis
documentation
client medical history
client education
safety concerns
client identifiers
client diagnoses/prognosis
vital signs
pain management
communication techniques
Identify abnormalities on a client cardiac monitor strip
data collection and analysis
client medical history
basic cardiac rhythms
scope of practice
Identify signs and symptoms of an infection

Linking of Knowledge Statements and Activity Statements
vital signs
data collection and analysis
documentation
skin integrity
infection control
client medical history
lab values
Provide care to client with an ostomy (e.g., colostomy, ileostomy or urostomy)
skin integrity
supplies
data collection and analysis
documentation
client education
communication techniques
wound care
anatomy/physiology
facility resources
infection control
standard/universal precautions
client medical history
coping mechanisms
psychosocial dynamics
Identify pathophysiology related to an acute or chronic condition
anatomy/physiology
disease processes
client medical history
data collection and analysis
Recognize signs and symptoms of complications and intervene appropriately when providing client care
anatomy/physiology
disease processes
communication techniques
client medical history
data collection and analysis
scope of practice
emergency procedures/equipment
critical signs and symptoms
drug interactions
lab values