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STRATEGIC PRACTICE ANALYSIS EXECUTIVE SUMMARY

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

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STRATEGIC PRACTICE ANALYSIS EXECUTIVE SUMMARY

According to the United States Health Workforce Chartbook, registered nurses (RNs) represent the largest occupation of health care workers in the U.S. with more than 2.8 million jobs reported in 2013 (U.S. Department of Health and Human Services, 2013). In the 2009-2010 academic years, 160,000 post-secondary RNs graduated with a degree in nursing, half of whom graduated with an associate's degree, and half of whom graduated with a bachelor's degree (U.S. Department of Health and Human Services, 2013). RNs work in a variety of settings, with more than 60 percent of RNs working in hospital settings, and others working in ambulatory care, community and public health centers, home health care services, long-term care facilities, schools and a variety of other settings. Across this diverse set of practice care settings, most RNs are responsible for treating clients and coordinating their care within interdisciplinary teams, providing advice and emotional support to clients and their families, and educating clients and the public about medical care (Institute of Medicine, 2010).

Becoming a nurse takes extensive training and education. To obtain a nursing license and practice in the field of nursing, all RNs in the U.S. and its territories must graduate from an approved program with an associate's or bachelor's degree in nursing, as well as pass a national licensing examination, known as the National Council Licensure Examination, or NCLEX®. The NCLEX is overseen by the National Council for State Boards of Nursing (NCSBN®), an independent, not-for-profit organization through which boards of nursing act and counsel together on matters of common interest and concern affecting public health, safety, and welfare, including the development of nursing licensure examinations (NCSBN, 2014). These exams include the NCLEX-RN® (for RNs) and NCLEX-PN® (for Licensed Practical/Vocational Nurses or LPN/VNs) Examinations, National Nurse Aide Assessment Program (NNAAP®), and the Medication Aide Certification Examination (MACE®).

Purpose

NCSBN is focused on establishing the validity and legal defensibility of the NCLEX-RN by ensuring it is comprehensive and that it aligns with the requirements of the nursing profession as it is currently practiced. To keep pace with the changing requirements of the job, NCSBN partnered with a research firm to conduct two studies as part of strategic job analyses of the RN job from 2012 through 2014. Conducting a comprehensive job or practice analysis prior to the development of tests, selection measures, or credentialing exams represents commonly accepted best practices (Society for Industrial Organizational Psychology, 2003) and meets legal requirements according to the Uniform Guidelines on Employee Selection (Equal Employment Opportunity Commission, 1978). The job analysis information collected via the Strategic Job Analyses will help inform the test plan for the NCLEX-RN, which outlines the content of the items to be tested on the exam, helping NCSBN ensure the exams are psychometrically sound and legally defensible. These studies focused on collecting both qualitative and quantitative data from a diverse set of job experts about the requirements of the job of entry-level RNs, leveraging multiple data collection methods, and considering aspects of the job that are evolving.

NCSBN had several research goals across the two studies. First, NCSBN sought to ensure complete and detailed documentation of the full scope of RN work in its current form, including duties, tasks, knowledge, skills, abilities, and other personal characteristics (KSAOs), tools and equipment, health care trends, key judgments, and consequences of error [in performance]. Each is defined in Exhibit ES-1, on the next page.

Exhibit ES-1: Definitions of Job Analytic Data Collected for the Functional and Strategic Job Analyses

| Job Requirement | Definition | Job Requirement | Definition |
|-----------------|---|--------------------------------|--|
| Duties | Collections of work activities that have a common objective. | Other Personal Characteristics | Any other personal attributes (e.g., personality traits, attitudes, work styles, values) that are required to perform the job. |
| Tasks | Specific work activities performed for a specific purpose. | Tools and Equipment | Objects used by workers to complete job tasks. |
| Knowledge | Body of factual, technical, or procedural information a worker uses to perform a job. | Health Care Trends | Changes and trends in health care that may affect the RN job. |
| Skills | The capacity, developed through training or practice, to perform job tasks. | Key Judgments | Decisions workers must make to complete job tasks. |
| Abilities | Traits workers possess that give them the capacity to carry out nursing job tasks. | Consequences of Error | Negative results that can occur as a consequence of an incorrect judgment. |

Ultimately, the identification of these requirements could further position NCBSN to make changes to the NCLEX-RN to include new exam content and to explore the use of new item types.

In addition, NCSBN was interested in gathering future-oriented data regarding the job requirements of RNs in order to best anticipate changes in the scope of the job requirements that might be observed in future years. Gathering these data could help NCSBN track and anticipate changes that may affect the test plan in the future.

First Study

The goal of the first study was specifically to identify the ability requirements of the RN job, where abilities represent enduring characteristics of individuals that influence job performance. Information about the job duties, tasks and tools and equipment required of the job was collected as supporting evidence for the ability requirements.

To conduct this research, qualitative and quantitative job analysis data were collected in phases, each of which provided important information about the duties, tasks and ability requirements of the RN job, as outlined below.

Qualitative Data Collection

To begin, the research firm reviewed existing information about the nursing profession, including results of previous NCSBN practice analyses (NCSBN, 2009; NCSBN, 2010), information from the U.S. Department of Labor's Occupational Information Network (O*NET: www.onetonline.org), and research literature obtained through broad searches. Then, the research firm conducted structured interviews with RNs and LPN/VNs to collect additional information regarding the duties, tasks, tools and equipment, and abilities for the

RN job. This phase of the work resulted in preliminary lists of job duties and tasks, abilities, and tools and equipment.

The research firm conducted job analysis site visits in four states across the country to observe RNs perform their work and to meet with them in small focus groups or one-on-one interviews. Across the four states, the research firm observed or met with a total of 127 job experts in 12 different health care facilities. These job experts represented 12 unique practice care settings (e.g., Medical Surgical, Critical Care, Assisted Living, Labor and Delivery, Home Health). The data collected during this phase of the research were used to ensure the accuracy, comprehensiveness and job-relatedness of the work and worker requirement lists.

Job Analysis Survey

The qualitative information gathered from these early efforts informed the development of a nationally administered job analysis survey designed to gather information from RNs about the job duties and abilities required to provide minimally safe and effective client care in their practice care settings. Most critically, the survey asked job experts to rate the list of abilities in terms of their importance to the performance of minimally safe and effective care within their particular care setting. Ability ratings were used for two purposes: (1) to continue accumulating evidence for the final abilities list, and (2) to guide the content of the linkage exercise workshops to be conducted in the subsequent phase. Across all practice care settings, social and interpersonal abilities received the highest rating, and physical abilities the lowest. When ratings were split by practice care setting, the overall ability rating did not differ substantially.

Due to the reasonably high ratings for even the lowest-ranking abilities, substantial supporting evidence for the list of abilities was gathered during this phase of the study, and all abilities were selected for inclusion in the linkage exercise workshops. Following the close of the electronic survey, the research firm also conducted a telephone survey nonresponse study to (1) learn about nonresponder reasons for not participating in the survey, (2) compare nonresponder and responder demographic characteristics, and (3) gather additional support for the validity of the survey results. Because the highest and lowest rated abilities were the same in both the nonresponder and responder samples, the research firm concluded that nonresponder biases did not adversely affect the data collected.

Ability to Task Linkage Exercise Workshop

As a final step in the research process, the research firm conducted workshops with RNs to establish the importance of each job task, the extent to which the abilities are essential for performing those job tasks, and whether the tools and equipment were used by entry-level nurses. The resulting ratings provide the quantitative basis for describing the job and establishing the abilities' job relatedness, an important legal requirement (Equal Employment Opportunity Commission, 1978). During the workshop, job experts rated the importance of job tasks, identified the job tasks performed by entry-level nurses as well as the tools and equipment they use, and identified the abilities required to perform each job task by completing a linkage exercise. The job experts also provided comments about the nature of the work performed by entry-level nurses and the challenges they may face.

The results validated the information collected in earlier phases of the research, and extended what was known about the jobs. Nearly all of the job tasks identified through earlier job analysis steps and included in the task lists were deemed important for the RN job. Only two RN tasks received a mean importance rating less than 3.00 (important) on a 5-point Likert scale.

Likewise, each task was identified as being performed by entry-level nurses in at least one practice care setting. In addition, many of the abilities that were rated high in importance were also linked to a large number of tasks.

Second Study

To further document the RN job and to support the development and maintenance of the NCLEX-RN, NCSBN initiated a second study. There were several goals for this study, including:

- To ensure complete documentation of the full scope of RN work in its current form;
- To expand the collection of data on job requirements beyond that of duties, tasks, knowledge and abilities to requirements such as skills, other personal characteristics and key judgments; and
- To gather future-oriented data regarding the job requirements of RNs in order to best anticipate changes in the scope of the job that might be observed in future years.

Similar to the first study, to conduct the second study, both qualitative and quantitative job analysis data were collected in phases, each of which provided important information about the work (e.g., duties, tasks) and worker (e.g., knowledge, skills, other personal characteristics) requirements of the RN job. Each data collection is described below.

Qualitative Data Collection

To begin, the research firm reviewed existing information about the nursing profession, including results of previous NCSBN practice analyses (NCSBN, 2009; NCSBN, 2012), information from the U.S. Department of Labor's O*NET, and research literature obtained through broad literature searches (e.g., health care and nursing trends). Next, the research firm conducted structured interviews with four RN nursing regulators to collect additional information regarding the health care and nursing trends. This phase of the work resulted in preliminary lists of job requirements and other job-related information that would be leveraged in later phases of the research.

Following, the research firm conducted four list generation focus groups at NCSBN headquarters in Chicago. Each focus group was comprised of eight to 10 job experts for a total of 35 RNs and one Nurse Practitioner. These nurses worked in 25 states across different regions of the U.S., representing 18 unique practice care settings including Critical Care, Medical Surgical, Outpatient Clinics, Pediatrics and Sub-acute Units. The research firm implemented brainstorming data collection techniques to ensure that job experts were able to generate a broad list of requirements, including requirements that had not been identified in previous research. Further, data were gathered in an iterative manner to allow job experts to build on the progress made by a previous job expert group. Across the four focus groups, the RN job experts provided input on the job duties and tasks, knowledge, skills, other personal characteristics, key judgments and their associated consequences of error for the RN job. Further, the groups provided input on anticipated health care trends and brainstormed how these trends might affect the RN job.

At this stage of the research, the duties, tasks, other personal characteristics, health care trends, key judgments, and consequences of error lists were finalized. These job requirements provided rich information about the RN job. Specifically, the duties, tasks, tools, and equipment provided supporting evidence for the knowledge and skills (and abilities) required on the job. The key judgments and consequences of error lists provided new requirements that NCSBN could consider for informing test specifications and new items types (e.g., situational judgment tests or SJTs).

The list of knowledge and skills were further developed and finalized in the next phase of the research—the linkage exercise workshops.

Linkage Exercise Workshops

As a final step in the Strategic Job Analysis research process, the research firm conducted four three-day linkage exercise workshops with a diverse group of nearly 50 job experts who represented more than 20

practice care settings. During each workshop, job experts rated the extent to which each knowledge and skill was required for performing each entry-level RN job task. The resulting ratings provided the quantitative basis for describing the job and establishing the knowledge and skills' job-relatedness, an important legal requirement (Equal Employment Opportunity Commission, 1978). During the workshop, RNs identified the knowledge and skills required to perform each job task by completing a linkage exercise. Some job experts also provided ratings regarding when each of the knowledge and skills are required to perform the job of an entry-level RN (e.g., upon hire, after being on the job for six months).

The results from the Strategic Job Analysis linkage exercise workshops supported results from the previous steps in the job analysis. Specifically, the job experts confirmed the job relevance of the lists of job duties and tasks, knowledge and skills developed through information collected from the literature review, structured interviews and focus groups. Of particular note, 96 percent of the knowledge statements and 92 percent of the skills were rated as required for the performance of RN job tasks by six months on the job or earlier. In addition, the majority of the knowledge statements (88 percent) and all of the skills linked to at least one task. *Nursing Process* and *RN Professional Responsibilities* were the most linked knowledge statements, and *Clinical Judgment*, *Professional Communication* and *Active Listening* were the most linked skills. Conversely, *Global Aspects of Health Care*, *Medical Tourism* and *Robotics* were among the least linked knowledge statements¹ and *Evidence-Based Information Collection*, *Client Admissions* and *Client Mobility Assistance* were the least linked skills.

Combined Results of the Two Studies

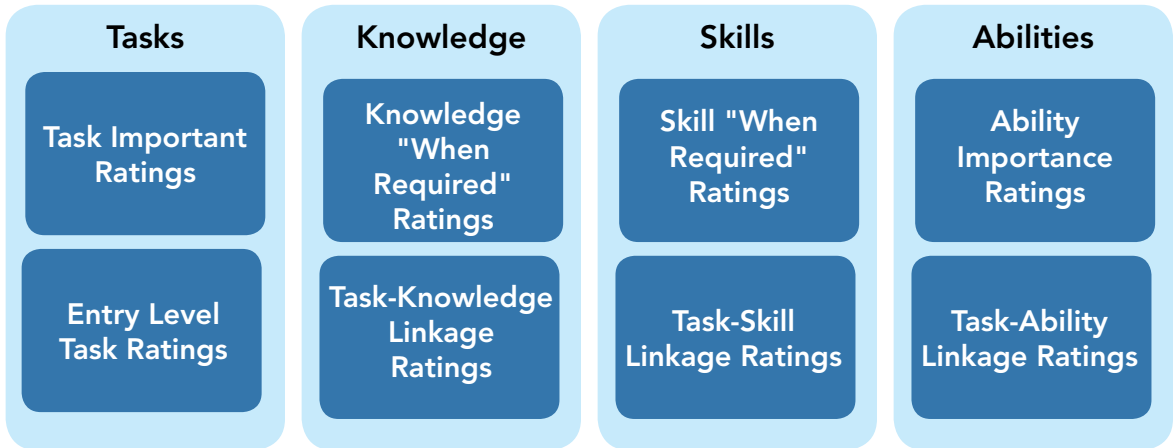
Over the course of the two studies, the research firm gathered critical job analytic data for the nursing profession, which consisted of the information presented below.

- Work requirements, including job duties and tasks performed and tools and equipment used.
- Worker requirements, including job KSAOs.
- Key judgments made on the job and the consequences of making an error in these judgments.
- Health care and nursing trends that are expected to affect the RN job as it is performed now and in the future.

Note that, although all of the job information listed above provided important information regarding the requirements of RNs, NCSBN and the research firm ultimately determined that the knowledge, skills, and abilities lists were most likely to be tested on the NCLEX-RN. As such, throughout both studies, job experts completed a variety of exercises to develop each list, including structured interviews, job observations, focus groups and linkage exercise workshops. Several types of quantitative data were collected during these exercises to determine the job-relatedness of each knowledge, skill or ability. Specifically, for the task list, task importance ratings were collected to determine the importance of each task for successful RN job performance. In addition, "entry-level" task ratings were collected to determine whether each task is required of new nurses (i.e., nurses who have been working on the job for six months or less). For the knowledge and skills lists, "when required" ratings were gathered regarding when each is required to successfully perform the job (i.e., upon hire or after being on the job for six months, 12 months, after 12 months or not required) and linkage ratings were gathered to determine the extent to which each knowledge or skill is required to perform each job task. Finally, for the ability list, ability importance ratings were gathered to determine the importance of each for successful RN job performance and linkage ratings were gathered to determine the extent to which each ability is required to perform each job task. Exhibit ES-2 provides a summary of the data collected regarding each list.

¹ Note that these are three examples of the knowledge statements that did not link to any RN job tasks.

Exhibit ES-2: Data Available to Support Final Requirement Lists



Decision Rules for Inclusion in Test Specifications

Ultimately, the research firm developed a conservative list of decision rules to leverage all of the data obtained for each list in order to inform the research firm's recommendations for prioritizing the final worker requirements lists.

First, the research firm adopted the decision rule that a knowledge, skill or ability "linked" to a specific job task when the mean rating for the pairing was greater than 1.5 (i.e., closer to "essential" rather than to the "useful" response option) or 75 percent or more of the job experts rated the knowledge, skill or ability as essential for performing a task.² Considering the links between each knowledge, skill or ability and the task list, the research firm concluded that any knowledge, skill or ability that did not link to at least one task should be considered lower priority for the test specifications because the job-relatedness evidence is not as compelling as for those that linked to job tasks.

Further, in cases in which the knowledge, skills or abilities linked to less than 5 percent of the job tasks (i.e., linked to less than 15 of the 286 tasks), the research firm reviewed and considered the supplemental data collected during the two studies regarding the tasks, knowledge, skills and abilities. In this process, the research firm prioritized the worker requirement lists by developing decision rules for the supplemental data and developed recommendations for the final worker requirement lists. These decisions rules are provided in Exhibit ES-3.

In cases in which a knowledge, skill or ability linked to less than 5 percent of the job (i.e., linked to less than 15 tasks), and did not meet any one of the above requirements, the research firm concluded that the linked knowledge, skill or ability was a lower priority for inclusion in the test specifications because the evidence was not strong enough to suggest such requirement be included on the test specifications.

² Other decision rules could be applied depending on one's goals. These were chosen as relatively conservative decision rules on the basis of past job analysis experience.

Exhibit ES-3: Supplemental Task, Knowledge, Skill and Ability Data Decision Rules

| Job Requirement | Data | Decision Rule |
|-----------------------------|--------------------------------------|---|
| Tasks | Importance Ratings ³ | Mean importance rating must be greater than 3.5 (i.e., closer to "very important" rather than the "moderately important" response option) |
| Tasks | Early-career Ratings ⁴ | Mean "early-career" rating must be greater than .50 (i.e., closer to the "yes" response option rather than the "no" response option) |
| Abilities | Importance Ratings ⁵ | Mean ability rating must be greater than 3.0 (i.e., at least important) |
| Knowledge and Skills | "When Required" Ratings ⁶ | Modal "when required" rating must be either "0 Months" or "6 Months" |

3 5-point rating scale, with an option for N/A: 1 = Not important and 5 = Extremely important

4 Dichotomous rating, with an option for Don't Know: 1 = Yes and 0 = No

5 5-point rating scale, with an option for N/A: 1 = Not important and 5 = Extremely important

6 4-point rating scale, with options to indicate N/A or Don't Know: 1 = 0 months, 2 = 6 months, 3 = 12 months, 4 = After 12 months

Final Recommendations

Leveraging the conservative decision rules developed to incorporate all of the data collected across research projects from a large, diverse group of job experts, using multiple data collection and research methods, the research firm prioritized the knowledge, skills and abilities for inclusion on the NCLEX-RN test specifications.

The top nine high priority knowledge statements, with the associated knowledge topics are provided in Exhibit ES-4.

| Exhibit ES-4: Top 9 High Priority Knowledge Statements | |
|---|--|
| Knowledge Statement | Topics |
| Nursing Process | <ul style="list-style-type: none"> ▪ Steps (i.e., assessing, care planning, implementing, evaluating) |
| RN Professional Responsibilities | <ul style="list-style-type: none"> ▪ Code of ethics ▪ Ethical principles (e.g., principles based in philosophy, such as nonmaleficence and autonomy) ▪ Practice error reporting and follow-up ▪ Scope of practice ▪ Code of conduct ▪ RN rights (e.g., conflicts of interest; rights of refusal; responsibility to clients, such as non-abandonment) |
| Documentation | <ul style="list-style-type: none"> ▪ Documentation process ▪ International Classification of Diseases (ICD) coding system ▪ Appropriate use of abbreviations ▪ Medical terminology ▪ Order transcription process ▪ Types of information to document |
| Focused Assessment | <ul style="list-style-type: none"> ▪ Types ▪ Development ▪ Code status (e.g., do not resuscitate [DNR], do not intubate [DNI]) ▪ Documentation ▪ Evaluation of effectiveness |
| Plan of Care | <ul style="list-style-type: none"> ▪ Methods (e.g., clinical interviewing, observation) ▪ Types of assessments (e.g., neurological, psychosocial) ▪ Sequence of assessments ▪ Which to perform ▪ When to perform ▪ Tools ▪ Changes in client condition (e.g., signs and symptoms, level of severity or urgency, types of interventions) |
| Client Needs Assessment | <ul style="list-style-type: none"> ▪ Methods (e.g., clinical interviewing, observation) ▪ Topics (e.g., learning styles, spiritual and cultural values, types of preferences, decisional capacity, physical limitations, language barriers) |
| Client, Family and/or Caregiver Education | <ul style="list-style-type: none"> ▪ Teaching techniques ▪ Resources ▪ Evaluation of effectiveness |
| Vital Sign Collection | <ul style="list-style-type: none"> ▪ Types of vital signs ▪ Techniques ▪ Normal and abnormal vital sign values ▪ Importance of client's baseline and deviations ▪ Types of interventions |
| Client-Centered Care | <ul style="list-style-type: none"> ▪ Concepts ▪ Holistic care principles ▪ Care integration (including family and/or caregiver involvement) ▪ Traditional and non-traditional family structures |

The top ten high priority skills, with their associated definitions, are provided in Exhibit ES-5.

| Exhibit ES-5: Top 10 High Priority Skills | |
|--|---|
| Skill | Definition |
| Clinical Judgment | Skill in recognizing cues about a clinical situation, generating and weighing hypotheses, taking action and evaluating outcomes for the purpose of arriving at a satisfactory clinical outcome. Clinical judgment is the observed outcome of two unobserved underlying mental processes, critical thinking and decision making. |
| Professional Communication | Skill in communicating in a clear, concise and effective manner, and adapting one's own communication style to meet the needs of the health care team, clients, family and/or caregivers, and situation. |
| Active Listening | Skill in giving full attention to what is said, taking time to understand the points made, asking questions as appropriate, and asking clarifying questions and repeating back what the client, family, caregiver and/or health care team member said. |
| Problem Solving | Skill in developing and evaluating interventions to resolve complex problems within the context of nursing. |
| Critical Thinking | Skill in using logic and reasoning to identify the strengths and weaknesses of alternative health care solutions, conclusions or approaches to clinical or practice problems. |
| Therapeutic Communication | Skill in adapting one's own communication style and demonstrating sensitivity to meet the needs of, build rapport with, and convey potentially upsetting information to the client, family and/or caregiver. |
| Client Monitoring | Skill in recognizing changes in client condition and proactively anticipating complications or adverse outcomes to medications, procedures, and treatments. |
| Documenting | Skill in documenting interventions and nursing outcomes clearly, concisely and according to professional standards, facility and unit policy, and mandated reporting regulations, using electronic or paper medical records. |
| Client Education | Skill in assisting clients in accessing and interpreting health information, and providing relevant and sensitive health education information general to their condition or specific to their care plans at the client level of understanding. |
| Focused Assessment | Skill in selecting a particular type of assessment based on client complaint, symptom or diagnosis. |

The top nine high priority abilities, with their associated definitions, are provided in Exhibit ES-6.

| Exhibit ES-6: Top 9 High Priority Abilities | |
|--|--|
| Abilities | Definition |
| Oral Comprehension | Ability to listen to and understand information and ideas presented through spoken words and sentences. |
| Task and Information Ordering | Ability to arrange items or implement actions in a prescribed order by correctly following rules, protocols or procedures. |
| Dependability | Ability to be reliable, responsible and accountable to others. |
| Oral Expression | Ability to use appropriate words and sentences in speaking so others will understand. |
| Written Comprehension | Ability to read and understand information and ideas presented through written words and sentences. |
| Self Sufficiency | Ability to work independently with little guidance or assistance from others. |
| Speech Clarity | Ability to communicate orally in a clear fashion that is understandable to a listener. |
| Social Confidence | Ability to display self-confidence when working with others. |
| Written Expression | Ability to use appropriate words and sentences in writing so others will understand. |

Ultimately, only 33 knowledge statements, one skill and three abilities were deemed low priority for inclusion on the test specifications due to the weaker evidence of their job-relatedness.

The research firm recommends, with confidence, that the requirements deemed high priority have been vetted and are supported with substantial evidence from job experts. In cases in which a knowledge, skill or ability was classified as low-priority, the evidence is less compelling for inclusion of these requirements on the test specifications. However, it should be noted that these recommendations are conservative. NCSBN may want to continue to monitor and collect data on these low-priority requirements as they may become more relevant to the entry-level RN job in the future.

Summary

From 2012 through 2014, NCSBN and the research firm collaborated to develop a technical approach for the Strategic Job Analyses that would maximize the research firm's ability to collect data on the full scope of the RN job in its current and future form, and help ensure that the job-relatedness of the job requirements could be demonstrated to meet both legal (Equal Employment Opportunity Commission, 1978) and professional standards. The following job requirements and job-related information were collected:

- Duties;
- Job tasks;
- Knowledge;
- Skills;
- Abilities;
- Other personal characteristics;
- Tools and equipment;
- Health care trends; and
- Key judgments and consequences of error.

Ultimately, an iterative, mixed-method data collection process was developed and followed for both studies, as described below.

- Two environmental scans, which included reviews of the relevant literature—such as recent practice analyses, workforce reports, the U.S. Department of Labor's O*NET, and Fleishman's taxonomy of human abilities (Fleishman, 1996; Fleishman & Reilly, 1995; Fleishman et al., 1995)—and structured interviews with 18 RNs, including nursing regulators, educators, clinicians and incumbents.
- Site visits, which included 70 RN job experts from more than 15 practice care settings who participated in at least one of the three activities conducted during the site visits— job observations, focus groups and structured interviews.
- A job analysis survey of more than 2,000 entry-level RNs from more than 25 practice care settings, in which RNs provided quantitative ratings of the duties and abilities required of RNs and a follow-up nonresponder study.
- Four list generation focus groups each comprised of eight to 10 job experts for a total of 35 RNs and a nurse practitioner from more than 10 practice care settings, in which job expert input was gathered on duties, tasks, knowledge, skills, other personal characteristics, key judgments with associated consequences of error and health care trends.
- Six linkage exercise workshops with more than 65 RN job experts representing more than 20 practice care settings, in which job experts rated the extent to which each knowledge, skill or ability is required for performing each job task.

Exhibit ES-7 summarizes the data collection methods used to develop and finalize each of the final lists of job requirements across the two studies.

| Exhibit ES-7: Data Collection Methods Used to Develop Each Job Requirement List Across Studies | | | | | | | |
|---|---|--------------------|---------------------|-----------------------------------|---|-------------------------------------|-----------------------------------|
| Job Information | Study One (2012–2013) | | | | Study Two (2014) | | |
| | Literature Search & Interviews | Site Visits | Job Analysis | Linkage Exercise Workshops | Literature Search & Interviews | List Generation Focus Groups | Linkage Exercise Workshops |
| Duties | ▲ | ▲ | ▲ | ▲ | | ▲ | |
| Tasks | ▲ | ▲ | | ▲ | ▲ | ▲ | ▲ |
| Knowledge | | | | | ▲ | ▲ | ▲ |
| Skills | | | | | ▲ | ▲ | ▲ |
| Abilities | ▲ | ▲ | ▲ | ▲ | | | |
| Other Personal Characteristics | | | | | ▲ | ▲ | |
| Tools and Equipment | ▲ | ▲ | | ▲ | | | |
| Health Care Trends | | | | | ▲ | ▲ | |
| Key Judgements | | | | | | ▲ | |
| Consequences of Error | | | | | | ▲ | |

The major purpose of the Strategic Job Analyses studies was to support the development and maintenance of the NCLEX-RN test specifications through the development and validation of knowledge, skills and abilities required of entry-level RNs. The knowledge, skills and abilities lists were developed by collecting data across research projects, from a large, diverse group of job experts, and through multiple data collection and research methods. Work requirements and other job-related information (e.g., tools and equipment) were collected to serve as justification for the requirement of a given knowledge, skill or ability. An iterative process was used such that in the early stages of list development, the majority of ideas generated by job experts were included on the list. Then, throughout the remaining stages of the research studies, these lists were further refined via multiple job expert reviews and ratings.

Exhibit ES-8 displays the key results from the research studies, including:

- The number of job requirements included in each list;
- Recommendations concerning whether the list should be reviewed and considered for inclusion within the NCLEX-RN test specifications;
- Example job requirements from each of the lists; and
- Reference to the appendix that contains each of the final lists, with the associated job expert ratings when applicable.

| Exhibit ES-8: Key Results Regarding Each Job Information List | | | |
|--|--|--|--|
| Job Information | # of Requirements on Final List | # of Requirements Recommended for Test Specifications | Example(s) |
| Duties | 11 | – | <ul style="list-style-type: none"> ▪ Collecting and Documenting Client Health Data |
| Tasks | 286 | – | <ul style="list-style-type: none"> ▪ Maintain continuity of care within or between health care facilities and post-discharge. |
| Knowledge | 165 | 132 | <ul style="list-style-type: none"> ▪ Activities of Daily Living <ul style="list-style-type: none"> ◇ Types ◇ Requirements ◇ Assistance techniques |
| Skills | 65 | 64 | <ul style="list-style-type: none"> ▪ Medication Administration ▪ Critical Thinking |
| Abilities | 75 | 72 | <ul style="list-style-type: none"> ▪ Oral Comprehension |
| Other Personal Characteristics | 54 | – | <ul style="list-style-type: none"> ▪ Willingness to work in a fast pace environment ▪ Integrity |
| Tools and Equipment | 137 | – | <ul style="list-style-type: none"> ▪ Catheters ▪ Thermometer |
| Health Care Trends | 38 | – | <ul style="list-style-type: none"> ▪ Aging population ▪ Cross-state Licensing |
| Key Judgements | 76 | – | <ul style="list-style-type: none"> ▪ How to prioritize daily tasks by importance/criticality ▪ When to seek help from more experienced staff or primary care provider |
| Consequences of Error | 69 | – | <ul style="list-style-type: none"> ▪ Decline in client health ▪ Increase client length-of-stay |

The Strategic Job Analyses studies represent an important evolution in NCSBN's goal to advance nursing excellence. These studies serve as an early step toward assessing worker requirements beyond job knowledge as well as gathering data to identify anticipated changes that may be needed for the NCLEX-RN test plan in future years. Ultimately, as a result of these studies, NCSBN has a rich database

of job documentation with supporting qualitative and quantitative data that can be used to support the development and maintenance of the NCLEX-RN test specifications.

Recommended Next Steps

Based on the experience gained from conducting the job analysis studies and a review of the data analysis findings, the research firm suggests several next steps for NCSBN to consider following the review of this report. First, because of the plethora of data and findings presented and the multiple ways in which the data can be grouped, sorted and analyzed, NCSBN may wish to thoroughly examine the data and findings, exploring the data through multiple angles and perspectives. Any additional findings, along with the findings presented in this report, should be considered in light of health care trends (e.g., shifts in client conditions, changes in health care education and training), advances in health care technology and policy issues. During this review, NCSBN may wish to consider the value of the current research and determine whether it would be helpful to conduct a strategic job analysis for the LPN/VN population in the future.

Second, NCSBN may wish to review and update the existing NCLEX-RN test specifications. During this step, the research firm recommends considering the development of new item types for measuring the updated list of knowledge and the newly developed lists of skills and abilities.

Third, NCSBN may consider conducting a criterion-related validation study to determine the validity of the NCLEX-RN as a predictor of RN job performance. Criterion-related validity refers to the extent to which scores on a measure predict job-relevant outcomes. This can be established by gathering scores on the predictor measure (e.g., NCLEX-RN) and subsequent job performance scores, and calculating the statistical relationship between the assessment scores and job performance scores. Criterion-related validity provides additional evidence for the legal defensibility of selection measures, such as certification exams (Equal Employment Opportunity Commission, 1978).

Finally, the research firm encourages NCSBN to consider the frequency in which job or practice analyses, such as the two studies conducted by the research firm, should be conducted.

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