CE

1.5 ANCC Contact Hours

Keeping Up With Current Orthopaedic Nursing Practice

Results of the ONCB 2016 Role Delineation Study

Dottie Roberts ▼ Kathleen Pirri ▼ Margaret Hanes

BACKGROUND: The Orthopaedic Nurses Certification Board (ONCB) conducts a role delineation study (RDS), also known as a job task analysis, every 5 years. Results identify tasks performed by orthopaedic registered nurses and nurse practitioners, as well as musculoskeletal health conditions commonly experienced by their patients.

PURPOSE: The purpose of this study was to define current practice patterns among orthopaedic nurses and nurse practitioners to determine content for future certification examinations.

METHOD: An online survey methodology was used to identify task and knowledge statements representative of orthopaedic nursing practice.

FINDINGS: Of 6,462 e-mails sent, 904 valid responses were returned (response rate 13.9%). This is lower than results of the Orthopaedic Nurses Certification Board's 2010 RDS (22.7% response rate) but is considered acceptable for an RDS.

CONCLUSION: Survey results were analyzed by ONCB Test Committee members with guidance from psychometric staff at PSI/AMP. PSI/AMP staff were used to review and revise examination specifications for the Orthopaedic Nurse Certified (ONC) and Orthopaedic Nurse Practitioner-Certified (ONP-C) certification programs. New examination specification and passing points were implemented with April 2018 testing.

As an umbrella, the term *credentialing* refers to three forms of recognition for individuals in different areas of healthcare: licensure, registration, and certification (Chappell et al., 2018). Although gaining licensure earns a nurse the opportunity to practice professionally, certification by an independent organization supports his or her specialty expertise and knowledge (Kitto, Grant, Chappell, & Lundmark, 2017). Similar to licensure, the purpose of specialty nursing certification is consumer protection.

The Orthopaedic Nurses Certification Board (ONCB) is the only certifier of orthopaedic nurses in the United States, offering credentials for RNs (ONC) and nurse practitioners (ONP-C). Over the years since the first ONC examination in 1988, nurses from Canada and Hong Kong also have tested and earned certification. To meet the goal of consumer protection and to continue to recognize current expertise and knowledge, ONCB members must ensure the examinations are always based on current practice in orthopaedic nursing. Along with rapid changes in orthopaedic nursing practice, certification program accreditors such as the Accreditation Board for Specialty Nursing Certification (ABSNC, 2017) require accredited program such as the ONC and ONP-C to conduct a role delineation study (RDS) at least every 5 years. This allows representative subject matter experts to aid the ONCB in identifying necessary changes to the examination specifications.

Background

After the ONCB was incorporated in 1986, volunteers began developing a certification examination appropriate for RNs. The first ONC examination was offered at the Annual Congress of the National Association of Orthopaedic Nurses (NAON) in Phoenix, AZ, in 1988. Since that date, more than 10,000 RNs have taken the ONC examination. Almost 7,000 nurses currently hold this credential to indicate their specialty expertise in orthopaedic nursing. In October 2006, the ONCB launched examinations for orthopaedic NPs and clinical nurse specialists (CNSs). Although testing for the CNS

Dottie Roberts, EdD, MSN, MACI, RN, OCNS-C, CMSRN, CNE, has served as the Executive Director of the Orthopaedic Nurses Certification Board since 2005. She has been involved in four role delineation studies during her tenure as ONCB member and staff.

Kathleen Pirri, MSN, RN, ARNP, ONC, AGNP, ONP-C, is currently a director of the Orthopaedic Nurses Certification Board. She was a long-time member of the Test Committee and most recently served as chair of the Exam Prep Committee.

Margaret Hanes, BSN, RN-BC, ONC, is currently the chair of the Test Committee. She served as an ONC member of the committee during the reported study.

The authors have disclosed no conflicts of interest.

DOI: 10.1097/NOR.0000000000000571

credential was suspended in December 2014, more than 125 advanced practice registered nurses (APRNs) now hold the ONP-C credential. The ONCB has conducted an RDS every 5 years since the inception of its ONC certification program, with the 2005, 2010, and 2015 studies including APRNs. In this article, the relevant literature, methodology, results, and implications of the ONCB's 2015 RDS are discussed.

Literature Review

To reflect best practices and to comply with certification program accreditation requirements, certifying organizations routinely conduct RDSs. Study results must be submitted as part of applications for accreditation and reaccreditation. Many nursing certifying organizations also publish their study results to increase understanding of the nursing role in each specialty. Organizations often respond to calls for a new certification by first conducting an RDS.

For example, the Pediatric Nursing Certification Board (PNCB) received regular input from primary care providers who identified a need to expand their focus to include the mental health needs of children and adolescents (Hawkins-Welsh & Van Cleve, 2013). In response to a mental health provider shortage and in recognition of the need for timely identification of behavioral problems in children, the PNCB launched a national survey to determine interest in a specialty certification as a pediatric mental health specialist (PMHS) to serve as a value-added credential for nurses with advanced practice licensure. According to Hawkins-Welsh and Van Cleve, "Specialty certification was seen by 86% of these respondents as adding value and enhancing recognition of their skills and knowledge in mental health, and 77% reported that they would seek a new certification in this area if it were available" (p. 144).

The PNCB convened an expert task force in February 2009 to review the survey results (Hawkins-Welsh & Van Cleve, 2013). After it recommended development of a specialty certification, the PNCB undertook an RDS with a survey methodology to identify content specifications for certification as a PMHS. Survey respondents rated the importance of 86 distinct tasks in the following categories: primary mental health promotion, history taking, diagnostic decision-making, collaboration in diagnostic process, early management, and ongoing management. They also identified which diagnoses they saw most often and whether they diagnosed, managed, referred, or comanaged a patient with the disorder. Other areas of practice also were explored in the survey (e.g., use of specific screening tools, treatment and management, professional issues). After the expert panel reviewed survey results, the PNCB developed a detailed content outline for a new PMHS certification examination (Hawkins-Welsh & Van Cleve, 2013). The examination was beta tested in early- to mid-2011 and launched in December 2011. Authors concluded the RDS strongly supported "current understanding of the ways in which APRNs can fill the need for the PMHS" (p. 147).

An RDS conducted by the Nephrology Nursing Certification Commission (NNCC) had a triple purpose: to revalidate the current specifications for the certified clinical hemodialysis technician (CCHT), identify practice differences between entry-level and advanced technicians, and determine practice differences between hemodialysis technicians and licensed practical nurses (LPNs)/licensed vocational nurses (LVNs) in hemodialysis settings (Garbin & Chmielewski, 2013). The plan was to begin the study in 2006. However, NNCC members learned the Centers for Medicare & Medicaid Services (CMS) was revising the Conditions for Coverage for end-stage renal disease facilities to require all hemodialysis technicians to be certified by mid-April 2010 (or within 18 months of initial employment). New regulations also specified minimum education for technicians as well as changes to the education program. These changes prompted the NNCC to delay the RDS until the regulations were implemented; the project resumed in 2010 and data collection was completed in 2011.

Analysis of practice differences by a national task force was based on the three purposes of the RDS (Garbin & Chmielewski, 2013). The NNCC accepted the task force recommendations to continue current examination specifications for the CCHT program, develop a new certification examination for advanced hemodialysis technicians, and develop a new certification examination for LPNs/LVNs working in dialysis settings. The CCHT-A certification program was developed for technicians with 5 or more years of experience, and the CD-LPN/LVN certification program was developed for nurses with 2 or more years of experience with patients on dialysis. Both programs were launched in 2012, reflecting the CMS specification that an interprofessional team is needed and a critical part of the care of patients receiving hemodialysis.

Also in response to a change in practice, the Oncology Nursing Society (ONS) and the Oncology Nursing Certification Corporation partnered in conducting an RDS on the oncology nurse navigator (ONN) role (Lubejko et al., 2017). The ONS had conducted a previous RDS in 2011, when the navigator role was relatively new to oncology, but no unique skill set was identified. In 2016, the ONS and the ONCC completed a second RDS to redefine the role and determine whether a certification examination was warranted. Expansion of the navigator role in oncology had been driven in particular by the Commission on Cancer. The role also had been expanded to support organizational strategies from screening and diagnosis to survivorship and end-of-life care.

The two organizations followed the prescribed steps of a well-executed RDS (Lubejko et al., 2017). These included confirming the definition of *ONN*, reviewing and revising task statements from the 2011 RDS, and developing a draft survey to pilot. Feedback from the pilot survey group was used to create the final survey, which was distributed to more than 5,300 members and nonmembers in the ONS database. After return of 498 completed survey (9% response rate), evaluation of data demonstrated the responses were sufficiently representative of the sample to allow statistical analysis.

Results supported the belief that the ONN role had been expanding since the 2011 RDS (Lubejko et al., 2017). New foci in the role included psychosocial aspects of care (e.g., survivorship communication) and

the process of care (e.g., identification of patients for genetic counseling). Some differences between the ONN and clinical nurse roles also were identified. However, both roles were determined to require similar knowledge and skills. According to Lubejko et al., "About 74% of the knowledge statements on the 2016 ONN RDS were an exact match or aligned with a very similar item found on the OCN® Test Content Outline" (p. 48). Results did not support the need for a new ONN certification. Instead, they reinforced the ONS position statement supporting ONNs in their attainment of one of the credentials offered by the ONCC.

Other organizations have published the results of the most recent RDS. These include the American Holistic Nurses Credentialing Corporation (Erickson, Erickson, Campbell, Brekke, & Sandor, 2013) and the American Nurses Credentialing Center (pain management certification) (Willens, DePascale, & Penny, 2010). Although not every organization publishes the results of every RDS, the practice of publication is common and processes tend to be consistent across all nursing certifications. This is in large part due to requirements of the ABSNC and the National Commission on Certifying Agencies. These accreditation agencies publish standards that identify expectations in examination development and maintenance.

Purpose

The purpose of the 2016 ONCB RDS was to identify current orthopaedic nursing practice patterns and determine content for future certification examinations.

Methodology

As in past studies, a survey methodology was used for the 2016 RDS. Orthopaedic certified nurses were invited to serve on a Role Delineation Task Force, which had diversity in terms of educational preparation, years in nursing, years in orthopaedic nursing, and geographic distribution. In accordance with ABSNC standards in effect at the time of the study, members of the ONCB's standing Test Committee could not comprise a majority of the task force; only three of 13 task force members also served on the Test Committee.

Members of the Advisory Committee used various resources to confirm their understanding of the responsibilities of orthopaedic nurses. The previous RDS survey and detailed content outline were the primary resources for their work. Psychometric staff provided background information on the role delineation process, including its relationship to examination development and maintenance. Advisory Committee members completed seven activities as their part of the RDS:

1. Develop a sampling plan.
2. Identify tasks and knowledge statements for the survey instrument.
3. Identify major classifications of tasks and knowledge statements.
4. Determine the rating scale(s).
5. Determine the relevant demographic variables of interest.
6. Discuss the linkage between the knowledge and task statements, and how they will be used to create examination specifications.
7. Integrate the components of the survey in preparation for pilot testing. (Fabrey & Kassam, 2016a, 2016b, p. 1)

Sample

The ONCB Role Delineation Task Force broadly defined the target orthopaedic nursing RNs and NPs.

> An orthopaedic nurse is an RN who has recent relevant work experience, which may have occurred in any setting with a variety of patient populations with musculoskeletal conditions.
>
> An orthopaedic NP is a registered nurse who is licensed as an NP and has recent relevant work experience as an NP with patients who have musculoskeletal conditions. (Fabrey & Kassam, 2016a, 2016b, p. 5)

Potential participants in the study first had to agree these descriptions applied to them.

To gather data from those who considered themselves orthopaedic nurses and NPs, task force members distributed an e-mail invitation—with a link to the role delineation survey—to orthopaedic certified RNs and NPs. The survey also was sent to RNs and NPs who were not certified but may have been practicing in musculoskeletal health. The two primary sources of names and e-mail addresses were certificants of the ONCB and members of the NAON. Prospective participants had known e-mail addresses and had previously indicated a general willingness to be contacted by the organizations. After merger of the two lists and exclusion of any duplicate entries, 6,462 potential participants were contacted. The invitation e-mail explained the purpose of the study and indicated completion of the survey would take approximately 30 minutes. The e-mail further confirmed all responses would be held confidential. Completion of the survey was taken as informed consent.

Survey Design

Because this study was national in scope, task force members determined demographic questions should be included to assess the characteristics of survey respondents. Members identified 14 questions to address specific qualities, including size and type of practice, certifications held, percentage of time dealing with musculoskeletal conditions, medical conditions seen in patient population, and number of years as an orthopaedic nurse. Task force members then identified task and knowledge statements for the survey. Results of the previous RDS and existing examination specifications first were considered. Task force members reflected on tasks related to individual job responsibilities and knowledge statements from the current test specifications in creating the survey. PSI/AMP psychometricians also encouraged members to suggest new tasks or

Table 1. Single Significance Scale

How important is the following knowledge to your current practice? If you do not use the knowledge, select "Not part of my practice."
0 = Not part of my practice
1 = Part of my practice but not very important
2 = Important
3 = Very Important
4 = Essential

knowledge statements that could be pertinent to current practice. At the conclusion of the first meeting, a draft list of tasks and knowledge statements was completed. The final survey included 54 knowledge statements (including some skills) and 158 task statements for both RNs and NPs.

To reflect current orthopaedic nursing practice accurately, task force members worked to ensure each task could be paired with a knowledge statement and each knowledge statement was relevant to a task. Six content domains were identified for RNs and the ONC examination, under which 54 knowledge statements and 104 task statements were categorized. Content domains included self-management, pain, complications, activity, nutrition, and psychosocial. Five role domains were identified for NPs and the ONP-C examination, under which 54 knowledge statements and 54 task statements were categorized. Role domains included clinician/practitioner, educator, manager, consultant, and researcher. Survey respondents would be asked to rate knowledge and task statements using a single significance scale (see Table 1 for example of single scale for knowledge statements). After initial consideration of the extent to which the knowledge or task is necessary to job performance, respondents would indicate their combined judgments regarding importance and performance frequency (Fabrey & Kassam, 2016a, 2016b).

Members of the Role Delineation Task Force then completed the survey draft as a pilot. A discussion and review of results followed with no substantive changes to the survey. The final online survey then was prepared and invitation messages containing a link to the survey were e-mailed to individuals by PSI/AMP. One week before the survey deadline, a reminder message was sent to persons who had not yet completed the survey. As an added incentive to complete the survey, all respondents who provided their names and contact information at the end of the survey were entered to win a 16G iPad Mini, free recertification, or a free certification examination (if eligibility requirements were met).

Findings and Discussion

Of the 6,462 e-mails sent, 904 valid responses were considered after allowance for incorrect e-mail addresses and incomplete surveys (13.9% response rate). Comparably, this rate was lower than the previous RDS in 2010 (22.7%). However, the 2015 RDS response rate was considered very acceptable. Notably, of the responses, 827 individuals responded as RNs (91.48%) and 77 responded as NPs (8.51%). Task force members agreed the high number of RN respondents was representative of the specialty.

Task force members reviewed demographic information in aggregate and then separately by RN and NP roles (Fabrey & Kassam, 2016a, 2016b). Both groups shared similar results in regard to the percentage of time treating patients with similar orthopaedic conditions (see Figure 1). Both groups also reported working more than 36 hours per week caring for patients with musculoskeletal health concerns.

Nurse practitioner respondents indicated they had worked in orthopaedics an average of 20 years, whereas RNs indicated they had worked in orthopaedics for at least 5 years. The number of years caring for patients with musculoskeletal health conditions for both groups ranged from zero to just under 45.

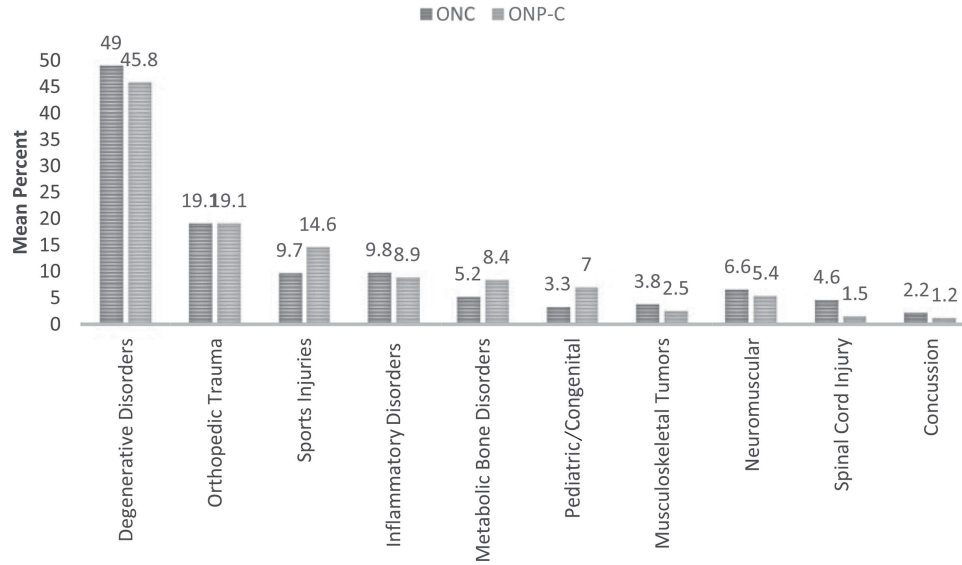

Figure 1. Percentage of patients treated by musculoskeletal condition.

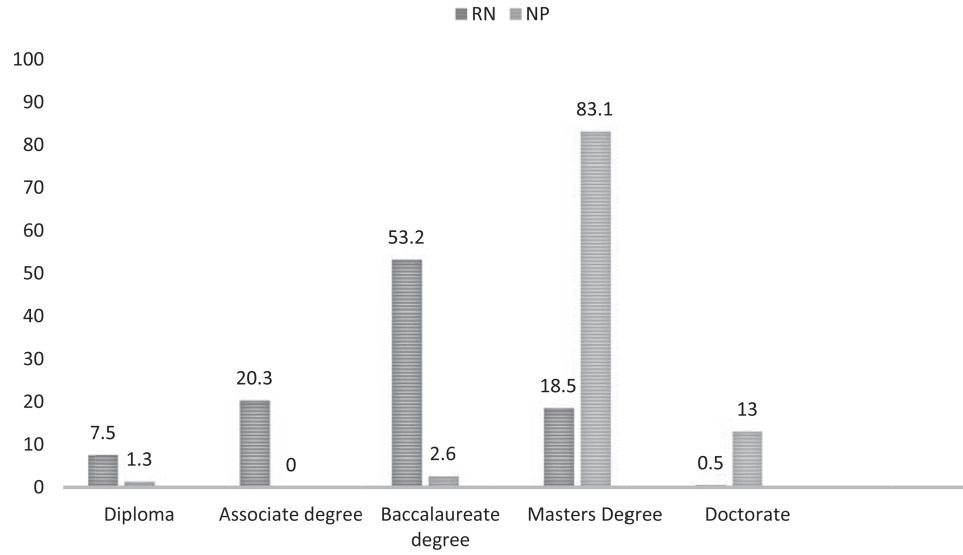

FIGURE 2. Highest level of nursing education. NP = nurse practitioner; RN = registered nurse.

See Figure 2 for data on the highest level of nursing education for RNs and NPs. In addition, many respondents indicated they have a degree in a field other than nursing (see Figure 3). Most RN respondents (92.7%) and NP respondents (94.7%) received their initial education in the United States. A clear majority of RNs (90.1%) and NPs (79.2%) indicated they were certified in orthopaedic nursing. In addition, the majority of respondents worked with adults (aged 19–65 years) or older adults (older than 65 years). Approximately one third of respondents in both groups worked in hospitals with 100–299 beds (33%). Task force members concluded the demographic results were expected, and a sufficient number of responses were received to facilitate this analysis.

Another important aspect of the RDS was respondents' views of the adequacy of the instrument. After rating the significance of all task and knowledge statements, respondents were asked to address any statements related to orthopaedic nursing they believed may not have been included in the survey. This was accomplished by prompting the respondents to create a list of statements. In addition, respondents were asked to answer the following question: "How well do you feel this survey covered orthopaedic nurses?" Six respondents (<1%) selected *inadequately*, 439 (48.9%) selected *adequately*, and 453 (50.4%) selected *completely*. These assessments confirmed strong support for the adequacy of the instrument.

Adequacy of the instrument as it relates to reliability is also important. Reliability (coefficient α) between survey items (tasks or knowledge statement) estimates the extent to which each scale represents a consistent collection of items (Fabrey & Kassam, 2016a, 2016b). Interrater reliability is more important as it indicates the degree to which raters agree on the significance of an item. This calculation also indicates how likely it would be that another sample of raters from the same population would give similar ratings to the present sample. Table 2 depicts the tasks and knowledge statement reliability for the overall respondent group.

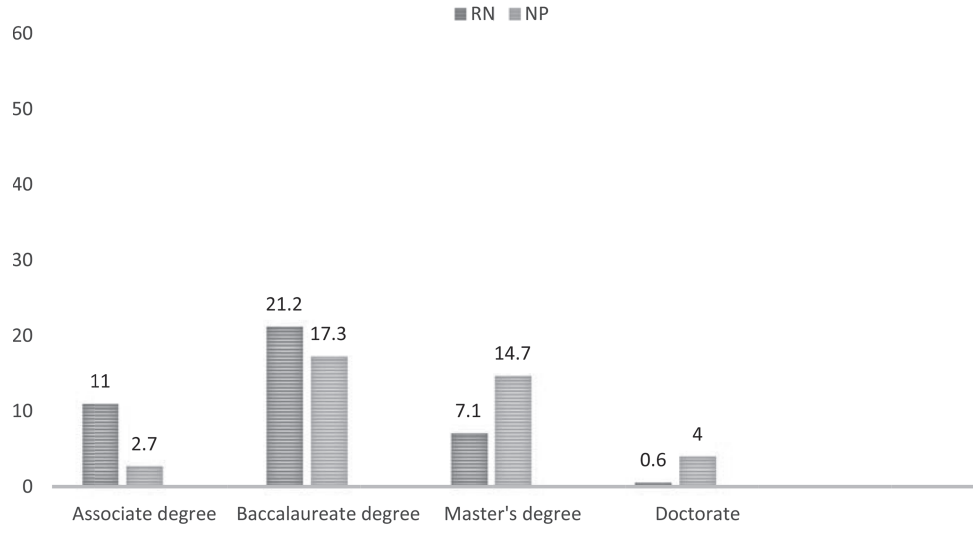

FIGURE 3. Highest level of education—other than nursing. NP = nurse practitioner; RN = registered nurse.

Table 2. Task and Knowledge Statement Reliability

Survey Sections	Number of Task Statements	Reliability (Consistency) Between Tasks (Coefficient α)	Between Respondents (Intraclass)
RN			
Self-management	8	.92	.89
Pain	20	.95	.98
Complications	34	.97	.88
Activity	22	.98	.88
Nutrition	6	.93	.99
Psychosocial	12	.97	.98
All tasks	102	.99	.84
All knowledge statements	47	.99	.91
NP			
Clinician	20	.9	.91
Educator	12	.84	.87
Manager	5	.85	.91
Consultant	9	.89	.92
Researcher	8	.94	.19
All tasks	54	.95	.84
All knowledge statements	54	.96	.80

Note. NP = nurse practitioner; RN = registered nurse.

As previously noted, each respondent used the single significance scale (see Table 1) to classify tasks and knowledge statements as they pertained to his or her nursing practice. Mean ratings then were calculated using only responses considered most significant to nurses' jobs. When comparing items, the higher the mean rating, the more significant the item to practice. Table 3 depicts the range ratings, mean rating, and standard deviations by respondent group. The two groups rated the significance as 0 (*not part of my practice*), 1 (*not very important*), 2 (*important*), 3 (*very important*), or 4 (*essential*). To ensure continued reflection of current orthopaedic nursing practice, task force members used these results to consider changes to the specifications for the ONC and ONP-C examinations.

ONC Examination

Survey results related to the ONC examination will be addressed first. ONC members of the Role Delineation Task Force determined the ONC examination specifications should continue to be organized primarily by patient conditions and content areas that define primary knowledge domains for orthopaedic RN practice. They organized the 102 task statements and 47 knowledge statements on the RDS survey into these patient conditions and content areas. With psychometric guidance, members judged a 135-item examination would be sufficient to sample examinees' mastery of knowledge in those domains. They reviewed participants' responses regarding the percentage of examination items that should be allocated to each domain and considered the mean significance ratings of knowledge statements in each domain. As subject matter experts, ONC task force members also considered the breadth of content within each knowledge area. Each member then independently identified a recommended item allocation in each area; these allocations were aggregated and present to the task force for discussion. Analysis of these results in relation to orthopaedic nursing practice led task force members to revise the number of questions for each patient condition and each content area for future forms of the ONC examination (see Tables 4 and 5). ONC examination specifications are available to candidates to use for test preparation.

ONP-C Examination

ONP-C members of the Role Delineation Task Force completed the same process as ONC members in analyzing results from NP respondents. However, the examination specifications were organized by APRN roles rather than by content areas.

Survey results and the revised examination specifications pinpoint the changing practices in orthopaedic nursing (see Tables 6 and 7). Interestingly, both RN and NP respondents indicated they are providing care for more patients with degenerative disorders. Given the increasing numbers of aging adults, this finding was not surprising; task force members increased the items in this area on both examinations. Since the 2010 survey, sports injuries are being seen with much less frequency by RNs, the majority of whom work in acute care settings. For NPs with practice most often in ambulatory care settings, this area of the examination was minimally changed.

Passing Point Determination

Because the ONCB's certification programs are accredited by the ABSNC (2017), the ONCB must conduct a passing point study (also known as *standard setting procedure*) whenever a new examination form is developed.

Table 3. Range and Mean Ratings by Respondent Group

	Task Statements			Knowledge Statements		
	Range Ratings	Mean Rating	Standard Deviation	Range Ratings	Mean Rating	Standard Deviation
RN	2.59–6.3	3.2	0.25	2.13–3.65	2.97	0.25
NP	2.18–3.81	3.01	0.83	1.13–3.84	3.03	0.9

Note. NP = nurse practitioner; RN = registered nurse.

Table 4. Revised ONC Examination Patient Conditions

Patient Condition	Items After 2010 Survey	Items Accepted May 2016
Degenerative disorders	42	51
Orthopaedic trauma	28	26
Sports injuries	26	15
Inflammatory disorders	10	12
Metabolic bone disorders	12	11
Pediatric/congenital disorders	6	7
Musculoskeletal tumors	5	7
Neuromuscular disorders	6	6

Table 5. Revised ONC Examination Content Areas

Content Area	Items After 2010 Survey	Items Accepted May 2016
Self-care	22–32	21–31
Pain	35–45	36–48
Complications	31–41	25–35
Activity	15–25	18–28
Nutrition	3–9	5–10
Psychosocial	3–9	4–9

Table 6. Revised ONP-C Examination Patient Conditions

Patient Condition	Items After 2010 Survey	Items Accepted May 2016
Degenerative disorders	48	53
Orthopaedic trauma	27	24
Sports injuries	20	19
Inflammatory disorders	12	11
Metabolic bone disorders	11	11
Pediatric/congenital disorders	7	8
Musculoskeletal tumors	5	4
Neuromuscular disorders	5	5

After completion of the RDS and revision of the examination content outlines, PSI/AMP psychometricians and test specialists developed new examination forms to use for standard setting. In mid-August 2017, the Passing Point Task Force of five ONCs and six ONP-Cs met to begin the process of recommending a passing point for the new forms. These volunteers had been selected primarily to be representative of prospective examination candidates in terms of educational preparation, years in nursing, years in orthopaedic nursing, and geographic distribution.

Table 7. Revised ONP-C Examination APRN Roles

Content Area	Items After 2010 Survey	Items Accepted May 2016
Clinician/practitioner	85–95	88–98
Educator	13–23	13–23
Manager	3–9	3–0
Consultant	11–19	8–18
Researcher	3–9	3–9

Note. APRN = advanced practice registered nurse.

The Angoff procedure was recommended by psychometricians and selected by the task force as the procedure for estimating the pass/fail cutoff score (Fabrey & Hellrung, 2017a, 2017b). This process is based on a statistical technique that sets the standard as it relates to item difficulty, specifically difficulty expected of minimally qualified examination candidates. Each member of the task force completed the appropriate new test form (ONC or ONP-C) for his or her current credential, providing an expected performance rating for each test item by answering the following question: "What percentage of minimally qualified candidates will answer this question correctly?" Under the guidance of the psychometric staff, task force members reviewed the results and identified recommended passing points for each of the two ONCB examinations. These were approved subsequently by the ONCB. Information on the passing point for each examination is available on the ONCB website (www.oncb.org).

Conclusion

To reflect current orthopaedic practice on certification examinations, the ONCB will continue to conduct an RDS approximately every 5 years. Data from the study assist in the evaluation of current test specifications and guide any necessary changes pertinent to nursing practice for RNs and NPs. Results of the study assist task force members to develop updated examination specifications (content outline) that are made available to candidates, item writers, and any other interested individuals. Content outlines could be considered as frameworks for the examinations. The current examination specifications can be found on the ONCB website (www.oncb.org).

References

Accreditation Board for Specialty Nursing Certification (ABSNC). (2017). *Accreditation standards for examination-based certification programs as of June 30, 2017*. Retrieved from https://www.absnc.org/accreditation-standards-examination-based-certification

Chappell, K., ElChamaa, R., Jeong, D., Kendall-Gallagher, D., Salt, E., Reeves, S., ... Kitto, S. (2018). Conceptualization and operationalization of certification in the US and Canadian nursing literature. *The Journal of Nursing Administration*, *48*(5), 238–246.

Erickson, H. L., Erickson, M. E., Campbell, J. A., Brekke, M. E., & Sandor, M. K. (2013). Validation of holistic nursing competencies: Role delineation study, 2012. *Journal of Holistic Nursing*, *31*(4), 291–302.

Fabrey, L., & Hellrung, J. (2017a). *A passing point study for the Orthopaedic Nurses Certification*. Olathe, KS: PSI.

Fabrey, L., & Hellrung, J. (2017b). *A passing point study for the Orthopaedic Nurse Practitioner Certification*. Olathe, KS: PSI.

Fabrey, L., & Kassam, S. (2016a). *Orthopaedic Nurse-Certified (ONC) role delineation study final report*. Olathe, KS: AMP/A PSI Business.

Fabrey, L., & Kassam, S. (2016b). *Orthopaedic Nurse Practitioner-Certified (ONP-C) role delineation study final report*. Olathe, KS: AMP/A PSI Business.

Garbin, M. G., & Chmielewski, C. M. (2013). Job analysis and role delineation: LPN/LVNs and hemodialysis technicians. *Nephrology Nursing Journal*, *40*(3), 225–240.

Hawkins-Welsh, E., & Van Cleve, S. (2013). The pediatric mental health specialist: Role delineation. *The Journal for Nurse Practitioners*, *9*(3), 142–148. doi:10.1016/j.nurpra.2012.11.017

Kitto, S., Grant, R., Chappell, K., & Lundmark, V. (2017). The relationship between specialty certification of individual nurses and outcomes: Developing a standardized taxonomy for research. *The Journal of Nursing Administration*, *47*(5), 245–247.

Lubejko, B. G., Bellfield, S., Kahn, E., Lee, C., Peterson, N., Rose, T., ... McCorkle, M. (2017). Oncology nurse navigation: Results of the 2016 role delineation study. *Clinical Journal of Oncology Nursing*, *21*(1), 43–50.

Willens, J. S., DePascale, C., & Penny, J. (2010). Role delineation study for the American Society for Pain Management Nursing. *Pain Management Nursing*, *11*(2), 68–75.

For additional continuing nursing education activities on orthopaedic topics, go to nursingcenter.com/ce.