



JOB ANALYSIS REPORT

NATIONAL CERTIFICATION CORPORATION

NEONATAL NURSE PRACTITIONER

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PSI SERVICES

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SUBMITTED TO



EXECUTIVE SUMMARY

This report describes the methodology and procedure used to conduct a job analysis and develop the exam specifications for the National Certification Corporation (NCC) Neonatal Nurse Practitioner (NNP) certification examination.

The three major activities that comprise the job analysis process described in this report are as follows:

1. **Job Analysis Committee Meeting** – A gathering of subject matter experts (SMEs) to discuss and develop a description of the scope of practice
2. **Job Analysis Survey** – A large-scale survey of practitioners not involved with the SME panel to validate the task and knowledge statements developed by the panel
3. **Development of Examination Specifications** – The development of Examination Specifications by the panel based on the results of the survey

Several practitioners were assembled by NCC to serve as SMEs. The individuals selected represent a wide variety of work-related characteristics such as years of experience, work setting, geographic location, and areas of specialty. This helps in developing a scope of practice that is reflective of the roles and responsibilities of the job role and is relatively free from bias. By analyzing the experiences and expertise of current practitioners, the results from the job analysis become the basis of a validated assessment that reflects the competencies required for competent job performance.

The job analysis process utilized in this study yields exam specifications that accurately reflect the scope of practice, allowing for the development of fair, accurate, and realistic assessments of candidates' readiness for certification. The resultant Examination Specifications document (Appendix C) indicates a 150-item examination with content distribution requirements at the competency area (content domain) level as well as topic (content subdomain) level. The five competency areas are:

1. General Assessment
2. General Management
3. Pharmacology
4. Embryology, Physiology, Pathophysiology and Systems Management
5. Professional Practice Issues

INTRODUCTION

This report describes the methodology and procedure used to conduct a job analysis and develop the exam specifications for the National Certification Corporation (NCC) Neonatal Nurse Practitioner (NNP) certification examination.

The procedure was conducted in accordance with principles and practices outlined in the *Standards for Educational and Psychological Testing*¹, which describe principles and guidelines for all aspects of test development, including content validation.

A job analysis (sometimes referred to as a practice analysis, job task analysis, or work analysis) is a scientific inquiry conducted in order to identify the tasks and work activities conducted, the context in which those tasks and activities are carried out, and the competencies (knowledge areas, skills, and abilities) required to perform a job role successfully². Different methods can be used which may differ in the levels of specificity in analyzing and describing different work elements, with the choice of method largely dependent on the intended purpose and use of the results. The methodology of the current analysis was tailored to the creation of exam specifications for test development.

When completed, the job analysis process utilized in this study yields exam specifications that accurately reflect the scope of practice, allowing for the development of fair, accurate, and realistic assessments of candidates' readiness for certification. The job analysis is typically performed every 4 to 5 years so that the content outline represents the current scope of practice. Because it serves as the primary basis for content validity evidence, as required by the aforementioned Standards, the job analysis is a primary mechanism by which a certifying body or regulatory board can ensure the accuracy and defensibility of an exam. It serves as the foundation of the certification exam and is critical to the success of the entire exam development process. All necessary documentation verifying that the validation process has been implemented in accordance with professional standards is included in this report.

This report is divided into three major activities of the job analysis process, which are:

1. **Job Analysis Committee Meeting** – A gathering of subject matter experts (SMEs) to discuss and develop a description of the scope of practice
2. **Job Analysis Survey** – A large-scale survey of practitioners not involved with the SME panel to validate the task and knowledge statements developed by the panel
3. **Development of Examination Specifications** – The development of Examination Specifications by the panel based on the results of the survey

¹ American Educational Research Association, American Psychological Association, National Council on Measurement in Education (2014). *Standards for Educational and Psychological Testing*. Washington, DC: AERA.

² Sackett, P. R. & Laczko, R. M. (2003). *Job and Work Analysis*. Handbook of Psychology. One: 2: 19–37.

JOB ANALYSIS COMMITTEE MEETING

NCC selected subject matter experts (SMEs) to represent a wide variety of work-related characteristics such as years of experience, work setting, geographic location, and areas of specialty to develop a scope of practice that is reflective of the roles and responsibilities of the job and is relatively free from bias. See Appendix A for a complete list of the SMEs and their qualifications.

PSI conducted a job analysis committee meeting on October 8, 2018 with SMEs to review the eligibility criteria, discuss the scope of practice and develop a list of tasks and knowledge areas that reflect the job role. PSI led the SMEs in refining task and knowledge statements and organizing them into a domain and subdomain structure. The outgoing NCC NNP exam content outline and candidate handbook were used as resources when developing the knowledge areas and tasks.

The job analysis committee developed 36 task statements.

1. Provide prenatal consultation
2. Create and/or update documentation in medical record
3. Communicate with primary care provider
4. Review maternal medical record
5. Perform physical assessment
6. Consult with specialist
7. Attend deliveries
8. Perform delivery room resuscitation and stabilization
9. Provide newborn consultation
10. Transport neonate
11. Order and interpret laboratory and diagnostic studies
12. Perform procedures
13. Respond to emergencies
14. Perform cardiopulmonary resuscitation
15. Evaluate risks and benefits of diagnostic and therapeutic interventions
16. Formulate diagnosis and implement plan of care in collaboration with family and multidisciplinary team
17. Communicate plan of care to family, staff, and/or other providers
18. Provide anticipatory guidance
19. Obtain informed consent
20. Participate in family care conferences
21. Calculate and order medications
22. Calculate intake/output, kcals, and GIR
23. Order and/or manage respiratory support
24. Order parenteral and/or enteral nutrition
25. Evaluate and document responses to interventions and modify plan of care
26. Manage and prioritize case load
27. Manage complex disease states
28. Participate in daily patient and/or multidisciplinary round
29. Participate in patient handoff
30. Plan and coordinate discharge
31. Provide palliative and/or end-of-life care
32. Provide grief counseling
33. Participate in quality improvement activities
34. Participate in research activities
35. Provide outreach education
36. Provide staff education

The job analysis committee developed 24 knowledge statements across five content domains.

1. General Assessment
 - A. Maternal History Affecting the Newborn
 - B. Neonatal
 - C. Family Integration
 - D. Discharge Preparation and Follow-up Care
2. General Management
 - A. Thermoregulation
 - B. Resuscitation and Stabilization
 - C. Growth and Nutrition
 - D. Fluids and Electrolytes
3. Pharmacology
 - A. Pharmacokinetics and Pharmacodynamics
 - B. Drugs and Breastfeeding
 - C. Common Drug Therapies
4. Embryology, Physiology, Pathophysiology and Systems Management
 - A. Cardiac
 - B. Pulmonary
 - C. Gastrointestinal
 - D. Renal and Genitourinary
 - E. Metabolic and Endocrine
 - F. Hematopoietic
 - G. Infectious Diseases
 - H. Musculoskeletal
 - I. Integumentary
 - J. Genetics
 - K. Neurological
 - L. Ears, Eyes, Nose, and Throat
5. Professional Practice Issues (e.g., legal, ethics, neonatal safety, quality improvement)

JOB ANALYSIS SURVEY

PSI developed, administered, and monitored a survey to validate the tasks and knowledge areas developed by the job analysis committee and to help determine content weighting. To this end, the survey collected respondents' ratings of the importance and frequency for each task and knowledge area. Below are the prompt and anchors for each rating scale.

What are the importance and performance frequency of each task **at entry to practice** as an NNP?

What are the importance and frequency of application of these knowledge areas **at entry to practice** as an NNP?

Importance

- 0 – N/A (Not exposed to)
- 1 - Not Important
- 2 - Minimally Important
- 3 - Moderately Important
- 4 - Very Important
- 5 - Critically Important

Frequency

- 0 - Never
- 1 – Rarely (Annually)
- 2 – Occasionally (Quarterly)
- 3 – Routinely (Monthly)
- 4 – Frequently (Weekly)
- 5 - Very Frequently (Daily)

Between October 22 and 31, 2018, a pilot survey was conducted with the job analysis committee and NCC staff members to ensure that the survey was operating correctly. No modifications were made following the pilot survey.

The live survey was sent using online survey software to a list of 6,696 individuals which was obtained from NCC. The list included all individuals who currently hold the NCC Neonatal Nurse Practitioner credential. The number of individuals that provided acceptable responses (selected 'Yes' to the first two questions described below, completed at least 69% of the task ratings, and worked less than or equal to 80 hours per week) was 983 (15%). The survey was opened on November 5, 2018 and closed on December 17, 2018. See Appendix B for the email sent to potential respondents.

The first question of the survey read: *Do you agree to take part in this survey?* The second question read: *Do you currently work as a Neonatal Nurse Practitioner?* These questions served as filters to allow only those who indicated "yes" to both questions to move forward with the rest of the survey.

Table 1 shows the mean ratings provided by the 983 respondents for the task statements. Table 2 shows the mean ratings provided by the 800 respondents for the knowledge statements.

Table 1.
Task Statement Ratings.

Task Statements	Importance	Frequency
1 Provide prenatal consultation	2.87	2.36
2 Create and/or update documentation in medical record	4.62	4.88
3 Communicate with primary care provider	4.01	4.12
4 Review maternal medical record	4.58	4.71
5 Perform physical assessment	4.93	4.99
6 Consult with specialist	4.00	3.85
7 Attend deliveries	4.57	4.54
8 Perform delivery room resuscitation and stabilization	4.73	4.28
9 Provide newborn consultation	3.54	3.45
10 Transport neonate	2.77	1.88
11 Order and interpret laboratory and diagnostic studies	4.84	4.96
12 Perform procedures	4.58	4.34
13 Respond to emergencies	4.77	4.17
14 Perform cardiopulmonary resuscitation	4.78	2.94
15 Evaluate risks and benefits of diagnostic and therapeutic interventions	4.53	4.60
16 Formulate diagnosis and implement plan of care in collaboration with family and multidisciplinary team	4.66	4.80
17 Communicate plan of care to family, staff, and/or other providers	4.67	4.95
18 Provide anticipatory guidance	4.02	4.34
19 Obtain informed consent	4.15	3.90
20 Participate in family care conferences	3.29	2.66
21 Calculate and order medications	4.88	4.91
22 Calculate intake/output, kcals, and GIR	4.69	4.90
23 Order and/or manage respiratory support	4.79	4.86
24 Order parenteral and/or enteral nutrition	4.64	4.77
25 Evaluate and document responses to interventions and modify plan of care	4.57	4.85
26 Manage and prioritize case load	4.33	4.77
27 Manage complex disease states	4.45	4.34
28 Participate in daily patient and/or multidisciplinary round	4.45	4.77
29 Participate in patient handoff	4.56	4.89
30 Plan and coordinate discharge	4.12	4.14
31 Provide palliative and/or end-of-life care	3.94	2.28
32 Provide grief counseling	3.19	1.80
33 Participate in quality improvement activities	3.60	2.72
34 Participate in research activities	2.82	1.84
35 Provide outreach education	2.46	1.36
36 Provide staff education	3.66	2.97

Table 2.
Knowledge Statement Ratings.

Knowledge Statements	Importance	Frequency
1A Maternal History Affecting the Newborn	4.59	4.78
1B Neonatal	4.87	4.96
1C Family Integration	3.86	4.48
1D Discharge Preparation and Follow-up Care	4.02	4.17
2A Thermoregulation	4.64	4.91
2B Resuscitation and Stabilization	4.87	4.57
2C Growth and Nutrition	4.64	4.91
2D Fluids and Electrolytes	4.79	4.95
3A Pharmacokinetics and Pharmacodynamics	4.23	4.52
3B Drugs and Breastfeeding	3.92	4.19
3C Common Drug Therapies	4.59	4.81
4A Cardiac	4.50	4.53
4B Pulmonary	4.74	4.86
4C Gastrointestinal	4.49	4.71
4D Renal and Genitourinary	4.36	4.50
4E Metabolic and Endocrine	4.25	4.31
4F Hematopoietic	4.31	4.40
4G Infectious Diseases	4.60	4.66
4H Musculoskeletal	3.89	4.01
4I Integumentary	4.14	4.35
4J Genetics	3.79	3.69
4K Neurological	4.42	4.44
4L Ears, Eyes, Nose, and Throat	3.90	4.04
5 Professional Practice Issues (e.g., legal, ethics, neonatal safety, quality improvement)	3.95	3.85

The survey included demographic questions regarding professional characteristics relevant to the job role. See Table 3 for a summary of the demographic questions in the survey.

Table 3.
Results of the Demographic Questions in the Job Analysis Survey.

1. Do you agree to take part in this survey?	n	%
No	11	0.76
Yes	1427	99.24

2. Do you currently work as a Neonatal Nurse Practitioner (NNP)?	n	%
No	113	7.94
Yes	1311	92.06

3. Which of the following best describes your PRIMARY practice setting as an NNP?	<i>n</i>	%
Hospital	957	97.55
Academia	19	1.94
Follow-up Clinic	4	0.41
Pediatric Primary Care	1	0.10

4. What is the highest level hospital/unit designation in which you practice as an NNP?	<i>n</i>	%
Level I (Basic care)	13	1.33
Level II (Specialty care for newborns at 32 weeks gestation or more, weighing 1500 g or more with problems expected to resolve rapidly or who are convalescing from higher level care.)	44	4.49
Level III (Subspecialty care for high-risk newborns needing continuous life support and comprehensive care for critical illness. Includes infants weighing less than 1500 g or less than 32 weeks gestation at birth.)	393	40.06
Level IV (Includes level III care as well as on-site pediatric medical and surgical subspecialties to care for infants with complex congenital or acquired conditions, coordinate transport systems and outreach education.)	529	53.92
Do not know	0	0.00
Not applicable	2	0.20

5. Which of the following best describes your basic NNP training?	<i>n</i>	%
Certificate Based	189	19.23
Graduate Based	794	80.77

6. What is your highest level of education?	<i>n</i>	%
Associate	11	1.12
Baccalaureate	44	4.48
Diploma	4	0.41
Certificate	27	2.75
Masters	699	71.11
Post Masters	79	8.04
Doctorate - DNP	99	10.07
Doctorate - PhD	17	1.73
Doctorate - Other	3	0.31

7. On average, how many hours per week do you work as an NNP? (Clinical and nonclinical practice)
Mean = 39.84 Standard Deviation = 10.87 Minimum = 0 Maximum = 80

8. How many years of experience do you have as an NNP? (Select 0 for less than 1 year)
Mean = 13.14 Standard Deviation = 10.10 Minimum = 0 Maximum = 38

9. Which of the following best describes your PRIMARY practice location?	n	%
Northeast	123	12.55
South	373	38.06
Midwest	285	29.08
West	179	18.27
Canada	20	2.04

10. What percentage of you practice as an NNP is devoted to each of the following categories? (Enter whole numbers, without a percent sign, that total 100)	Mean	Standard Deviation	Minimum	Maximum
Direct Patient Care	82.35	23.08	0	100
Education	8.47	11.21	0	100
Management	7.18	17.81	0	100
Research	2.00	5.32	0	80

DEVELOPMENT OF EXAMINATION SPECIFICATIONS

The Job Analysis Committee met on February 18, 2019 to review the results of the survey, finalize the tasks and knowledge that would comprise the next exam content outline, establish linkages among the tasks and knowledge areas, and finalize the content weighting for the examination.

The committee reviewed the demographic results and confirmed that the results matched expectations and impressions of the practitioner population, suggesting that the respondent sample is reflective of those currently working as Neonatal Nurse Practitioners.

Thirty-two task statements were retained by the committee. Task 20 (*Facilitate family care conferences*) was reworded to *Participate in family care conferences*, to provide a more accurate reflection of a Neonatal Nurse Practitioner's role in family care conferences at entry to practice. The following tasks were flagged for low frequency and importance ratings and removed based on committee consensus that each task falls outside scope of practice for entry level Neonatal Nurse Practitioners:

- Task 10 – *Transport neonate*
- Task 32 – *Provide grief counseling*
- Task 35 – *Provide outreach education*
- Task 36 – *Provide staff education*

All of the knowledge statements were retained by the committee. They noted that the survey results conformed to their expectations.

The committee identified linkages between the task and knowledge statements to ensure that each task was covered by at least one relevant knowledge area and that each knowledge area had at least one relevant task identified. See Table 4 for a summary of the knowledge-task linkages identified.

Table 4.
Linkages Among Knowledge and Task Statements.

	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17
1																
1A	x	x	x	x		x	x	x	x	x					x	x
1B	x	x	x		x	x	x	x	x	x	x	x	x		x	x
1C	x	x	x												x	x
1D		x	x												x	
2																
2A		x					x						x			
2B	x	x					x	x	x	x		x	x			
2C		x	x							x					x	x
2D		x				x				x					x	x
3																
3A		x								x				x		
3B		x	x												x	
3C	x	x	x	x		x	x	x				x	x	x	x	
4																
4A	x	x			x				x					x	x	
4B	x	x			x				x					x	x	
4C	x	x			x				x					x	x	
4D	x	x			x				x					x	x	
4E	x	x			x				x					x	x	
4F	x	x			x				x					x	x	
4G	x	x			x				x					x	x	
4H	x	x			x				x					x	x	
4I	x	x			x				x					x	x	
4J	x	x			x				x					x	x	
4K	x	x			x				x					x	x	
4L	x	x			x				x					x	x	
5																
5	x	x					x	x			x		x	x	x	x

	18	19	20	21	22	23	24	25	26	27	28	29	30	31	33	34
1																
1A	x			x							x	x				
1B				x		x	x	x	x	x	x	x	x	x		
1C	x	x	x								x	x	x	x		
1D	x		x						x		x	x	x	x		
2																
2A										x	x	x				
2B	x										x	x				
2C	x				x		x	x		x	x	x	x			
2D				x	x		x	x		x	x	x				
3																
3A				x						x	x	x				
3B	x							x			x	x				
3C	x			x		x		x		x	x	x				
4																
4A	x	x	x			x		x		x	x	x				
4B	x	x	x			x		x		x	x	x				
4C	x	x	x					x		x	x	x				
4D	x	x	x				x	x		x	x	x				
4E	x	x	x					x		x	x	x				
4F	x	x	x					x		x	x	x				
4G	x	x	x					x		x	x	x				
4H	x	x	x					x		x	x	x				
4I	x	x	x					x		x	x	x				
4J	x	x	x					x		x	x	x				
4K	x	x	x			x		x		x	x	x				
4L	x	x	x					x		x	x	x				
5																
5		x	x						x	x	x	x	x	x	x	x

The committee then reviewed the draft content weighting, discussing any adjustments necessary to align the number of items per content area with adequate content coverage on the examination. The draft content weighting was developed by determining a percentage weight based on the relative weight of the mean importance value for each content area.

The committee agreed to make the following adjustments at the domain level:

- III – Pharmacology was decreased from 19 to 13 items.
- IV – Embryology, Physiology, Pathophysiology and Systems Management was increased from 73 to 79 items.

Within each content domain, the committee agreed to item allocation modifications to align with the scope of each knowledge area, as applied at entry to practice. See Table 5 for a summary of the content weighting determination. The final examination specifications can be found in Appendix C.

Table 5.
Content Weighting Determination.

	Final	Survey
1 General Assessment	25	24.92
1A Maternal History Affecting the Newborn	7	6.60
1B Neonatal	11	7.00
1C Family Integration	3	5.55
1D Discharge Preparation and Follow-up Care	4	5.78
2 General Management	28	27.22
2A Thermoregulation	5	6.67
2B Resuscitation and Stabilization	7	7.00
2C Growth and Nutrition	7	6.67
2D Fluids and Electrolytes	9	6.88
3 Pharmacology	13	18.31
3A Pharmacokinetics and Pharmacodynamics	3	6.08
3B Drugs and Breastfeeding	3	5.63
3C Common Drug Therapies	7	6.60
4 Embryology, Physiology, Pathophysiology and Systems Management	79	73.86
4A Cardiac	10	6.47
4B Pulmonary	14	6.81
4C Gastrointestinal	6	6.45
4D Renal and Genitourinary	6	6.27
4E Metabolic and Endocrine	5	6.11
4F Hematopoietic	6	6.19
4G Infectious Diseases	12	6.61
4H Musculoskeletal	3	5.59
4I Integumentary	3	5.95
4J Genetics	5	5.45
4K Neurological	6	6.35
4L Ears, Eyes, Nose, and Throat	3	5.61
5 Professional Practice Issues	5	5.68
5 Professional Practice Issues (e.g., legal, ethics, neonatal safety, quality improvement)	5	5.68

APPENDIX A

SUBJECT MATTER EXPERTS

Name	Job Title	Employer	Years Exp.	State
Lindzie Smarch	NNP and Clinical Instructor	NC Children's Hospital; University of North Carolina: Chapel Hill	6	NC
Katherine Vincent	NNP	Medical University of South Carolina, Charleston	4	SC
Susan Reinarz	NNP	Pediatrix Medical Group	27	TX
Linda Juretschke	NNP	Loyola University Medical Center	28	IL
Kristen Howard	Affiliate Faculty and NNP	Regis University; Boulder Foothills Community Hospital	9	CO
Adriana Muntean	NNP	North Shore University Hospital	1	NY
Shea Aulbach	NNP	Indiana University Ball Memorial Hospital	14	IN
Tony Broderick	NNP	St. Luke's Regional Medical Center	14	ID
Penelope Watson	NNP	Sacred Heart Medical Center; Deaconess Medical Center	5	WA

APPENDIX B

SURVEY EMAIL

Date: November 5, 2018
From: info@nccnet.org
Subject: NCC Neonatal Nurse Practitioner Job Analysis Survey

Body: The National Certification Corporation (NCC) invites you to participate in the Neonatal Nurse Practitioner (NNP) Job Analysis Survey. This survey will be used to identify tasks and knowledge reflective of the professional role of an NNP.

The results of the survey will help develop the specifications for the NCC NNP certification exam. This is a great way to contribute to the industry and ensure that a high standard is maintained.

The survey will likely require 15 to 20 minutes to complete. Your individual responses will be kept confidential and will be combined with those of other respondents. The deadline to complete the survey is December 3, 2018.

Please note that participation in this survey is voluntary. At the end of the survey you can choose to provide your name and email for a chance to win a \$100.00 Amazon gift card.

Please read all questions carefully and select responses that best represent entry to practice as an NNP.

Thank you for your participation. Please direct all inquiries to info@nccnet.org.

APPENDIX C

FINAL EXAMINATION SPECIFICATION

	Content Area	# of Questions
1	General Assessment	25
1A	Maternal History Affecting the Newborn	7
1B	Neonatal	11
1C	Family Integration	3
1D	Discharge Preparation and Follow-up Care	4
2	General Management	28
2A	Thermoregulation	5
2B	Resuscitation and Stabilization	7
2C	Growth and Nutrition	7
2D	Fluids and Electrolytes	9
3	Pharmacology	13
3A	Pharmacokinetics and Pharmacodynamics	3
3B	Drugs and Breastfeeding	3
3C	Common Drug Therapies	7
4	Embryology, Physiology, Pathophysiology and Systems Management	79
4A	Cardiac	10
4B	Pulmonary	14
4C	Gastrointestinal	6
4D	Renal and Genitourinary	6
4E	Metabolic and Endocrine	5
4F	Hematopoietic	6
4G	Infectious Diseases	12
4H	Musculoskeletal	3
4I	Integumentary	3
4J	Genetics	5
4K	Neurological	6
4L	Ears, Eyes, Nose, and Throat	3
5	Professional Practice Issues	5
5	Professional Practice Issues (e.g., legal, ethics, neonatal safety, quality improvement)	5

Notes:

Each examination form will include one set of 25 unscored pretest items in addition to the 150 scored items. Three hours of testing time. Initial base form passing point will be determined by Angoff method in Q3 of 2019. Future passing points established through pre-equating.