



Job Analysis Report

Certified Anesthesiologist Assistant (CAA) and
Continued Demonstration of Qualifications (CDQ)

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Executive Summary

This report describes the methodology and procedures used to conduct a job analysis and develop the exam specifications for the National Commission for Certification of Anesthesiologist Assistants (NCCAA) Certified Anesthesiologist Assistants (CAA) certification examination and the Continued Demonstration of Qualifications (CDQ) recertification 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 committee
3. **Development of Examination Specifications** – The development of an Examination Content Outline by the committee based on the results of the survey

Several practitioners were assembled by NCCAA to serve as subject matter experts (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 Content Outline (Appendix E) indicates a 150-item CAA examination and a 115-item CDQ examination with content distribution requirements at the competency area (content domain) level as well as topic (content subdomain) level. The six competency areas are:

1. Principles of Anesthesia
2. Physiology, Pathophysiology, and Management
3. Instrumentation, Monitoring, and Anesthetic Delivery Systems
4. Subspecialty Care
5. Pharmacology
6. Regional Anesthesia and Pain Management



Introduction

This report describes the methodology and procedures used to conduct a job analysis and develop the exam specifications for the National Commission for Certification of Anesthesiologist Assistants (NCCAA) Certified Anesthesiologist Assistants (CAA) certification examination and the Continued Demonstration of Qualifications (CDQ) recertification examination.

The job analysis 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, role delineation study, work analysis, or competency profiling) is a scientific inquiry conducted 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 5 to 7 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 the 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 to practitioners not involved with the SME panel to validate the task and knowledge statements developed by the committee
3. **Development of Examination Specifications** – The development of an Examination Content Outline by the committee 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., Walmsley, P.T., Laczko, R.M. (2012). *Job and work analysis: Industrial and Organizational Psychology*. In N. Schmitt, S. Highhouse (Eds.), *Comprehensive Handbook of Psychology*, Volume 12. New York, NY: John Wiley and Sons.

Job Analysis Committee Meeting

NCCAA 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.

Prior to the job analysis committee meeting, three SMEs were interviewed to help provide background information on the job role, the history of the credential, and the anticipated future of the job role. These interviews were conducted on 22 and 23 February 2021.

PSI Services LLC (PSI) conducted a job analysis committee meeting on 4 March 2021 and 10 March 2021 with SMEs to 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 exam content outline was used as a resource when developing the knowledge and tasks. See Appendix B for the presentation used to orient the job analysis committee at the beginning of the meeting.

The job analysis committee developed 26 task statements, as follows.

T1	Obtain and review current and previous medical/anesthetic records to formulate optimal patient care plan.
T2	Interview patients and/or families, gather pertinent patient history, and confer with OR team and other healthcare colleagues to formulate the care plan.
T3	Identify and assess implications of patient's current medications and other treatments or therapies (for example, supplements, CPAP/BiPap).
T4	Perform an anesthesia focused physical examination in order to identify any potential concerns that may require additional work up, consultation, or evaluation.
T5	Obtain and analyze pre-operative test results for the purpose of identifying anesthetic considerations that require treatment, intervention or additional consultation.
T6	Determine patient's NPO status with respect to the ASA NPO guidelines/institutional NPO guidelines.
T7	Develop an anesthesia care plan, in collaboration with the ACT, by incorporating results from the patient assessment and verifying / obtaining patient consent.
T8	Ensure the availability of personnel and resources (for example, intraoperative monitoring, equipment, blood products, medications) required for patient management.
T9	Establish communication with the perioperative team to discuss pertinent information (for example, patient care hand-off, lab results, surgical plans, anesthetic concerns, post-op care needs).
T10	Perform anesthetic related procedures and utilize evidence-based best practice to optimize patient, anesthetic and surgical care.
T11	Ensure optimal patient positioning with respect to the surgical procedure to prevent injury.
T12	Anticipate and manage common and critical events with consideration of co-existing diseases, to optimize patient outcomes and prevent patient injury.

T13	Communicate concerns to the attending anesthesiologist and to members of the perioperative team, to ensure continuous safe and effective patient care.
T14	Implement and interpret the results of, continuous physiologic monitoring, to evaluate and respond to changes in the patient's physiologic parameters through use of medical equipment and pharmaceuticals.
T15	Perform proper transfer of care with effective hand-off to other healthcare providers, by exchanging all relevant information, in order to ensure safe post-anesthesia care.
T16	Participate in quality improvement/assurance activities to enhance safety and effectiveness of patient care.
T17	Integrate evidence-based practice from validated contemporary research and clinical case reviews.
T18	Promote adherence to regulations, standards of care, and evidence-based practice recommendations.
T19	Practice cost effective healthcare that optimizes resource allocation and quality of care.
T20	Practice truthfulness and transparency as they relate to patients, families, healthcare professionals and the public.
T21	Establish a true and transparent relationship of care with patients and families by describing the role of the CAAs on the healthcare team.
T22	Demonstrate sensitivity, empathy, accountability, and respect to diverse patient populations.
T23	Accept and adhere to professional codes of ethics.
T24	Contribute to the anesthesia body of knowledge (for example, participate in peer review process, research, publish scholarly literature, deliver presentations) to advance the delivery of quality care and improve patient safety.
T25	Provide education, mentoring and support to CAA students and other healthcare providers.
T26	Maintain personal wellness (for example, stress management, work/life balance) in order to provide the safest possible patient care.

The job analysis committee developed 43 knowledge statements across six content domains, as follows.

1	Principles and Practice of Anesthesia
1A	Preoperative Evaluation
1B	Administration of Anesthesia
1C	Fluid Management
1D	Operating Room Environment
1E	Professionalism
1F	Emotional Intelligence
2	Physiology, Pathophysiology, Management
2A	Cardiovascular
2B	Hematology and Coagulation
2C	Respiratory System
2D	Neurosciences and Neuromuscular
2E	Renal, Genital, and Urologic

2F	Hepatic and Gastrointestinal
2G	Metabolism and Endocrine
3	Instrumentation, Monitoring, Anesthetic Delivery Systems, Physics
3A	Cardiovascular Monitoring
3B	Neurophysiologic Monitoring
3C	Respiratory Monitoring
3D	Anesthesia Circuits
3E	Anesthesia Machine
3F	Physics and Mathematics
4	Subspecialty Care
4A	Obstetrics and Perinatal Management
4B	Pediatrics and the Neonatal Period
4C	Geriatric
4D	Ear, Nose, and Throat (ENT), Plastic Surgery, Ophthalmic
4E	Orthopedics
4F	Anesthesia Outside the Operating Room
4G	Trauma
4H	Bariatrics
4I	Cardiothoracic and Vascular Surgery
4J	Ambulatory Surgery
4K	Gastrointestinal (GI)
4L	Neurosurgery
4M	Genitourinary
4N	Critical Care
5	Pharmacology
5A	Pharmacokinetics and Pharmacodynamics
5B	Inhalational Anesthetics
5C	Anesthetic Maintenance Agents
5D	Local Anesthetics
5E	Cardiovascular Drugs
5F	Adjunct to Anesthesia
6	Regional Anesthesia and Pain Management
6A	Chronic and Acute Pain Management
6B	Peripheral Nerve Blocks
6C	Neuraxial Blocks
6D	Anatomical Landmarks

Following the creation of the task and knowledge lists, the committee members were tasked with identifying linkages between the task and knowledge statements. This was done to provide evidence that the knowledge areas were indeed required to perform the tasks identified. This was also done 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.

	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	T21	T22	T23	T24	T25	T26	
1A	X	X	X	X		X	X					X	X							X	X	X	X		X		
1B										X		X	X													X	
1C						X		X		X		X	X	X												X	
1D								X																		X	
1E																X	X	X	X						X		X
1F																											X
2A	X		X		X		X		X				X													X	
2B	X		X		X		X	X	X				X													X	
2C	X		X		X		X		X				X													X	
2D	X		X		X		X		X				X													X	
2E	X		X		X		X		X				X													X	
2F	X		X		X		X		X				X													X	
2G	X		X		X		X		X				X													X	
3A								X				X	X	X												X	
3B								X				X	X	X												X	
3C								X				X	X	X												X	
3D										X			X	X												X	
3E								X		X			X	X												X	
3F										X				X												X	
4A									X	X			X													X	
4B									X	X	X		X													X	
4C									X	X	X		X													X	
4D									X	X	X		X													X	
4E									X	X	X		X													X	
4F									X	X			X													X	
4G								X	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	X	X		X											X	
4K								X	X	X	X	X	X													X	
4L								X	X	X	X	X	X													X	
4M								X	X	X	X	X	X													X	
4N			X					X	X	X	X	X	X		X					X			X			X	
5A									X	X			X													X	
5B									X	X			X													X	
5C									X	X			X													X	
5D									X	X			X													X	
5E									X	X			X													X	
5F									X	X			X													X	
6A									X	X			X													X	
6B										X			X													X	
6C										X			X													X	
6D										X			X													X	

Job Analysis Survey

PSI developed, administered, and monitored a survey to validate the 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 knowledge area. The importance and frequency scales were used to evaluate the appropriateness of the inclusion of each knowledge statement and task. The survey also included demographic questions regarding professional characteristics relevant to the job role. See Appendix C for a copy of the final job analysis survey.

Importance How important is this knowledge in **your** role as a CAA?

- 0 - Not Relevant
- 1 - Minimally Important
- 2 - Somewhat Important
- 3 - Moderately Important
- 4 - Very Important
- 5 - Critically Important

Frequency How frequently do you use this knowledge in **your** role as a CAA?

- 0 - Not Relevant
- 1 - Rarely
- 2 - Seldom
- 3 - Occasionally
- 4 - Frequently
- 5 - Very Frequently

The survey was sent using online survey software to a list of 2,888 individuals that was obtained from NCCAA. The list consisted of active holders of the CAA credential. The number of individuals that responded to the survey was 921 (31.9%). The survey was opened on 23 March 2021 and closed on 12 April 2021. See Appendix D for the email sent to potential respondents.

Following the close of the survey, the data were analyzed to identify any respondents who did not agree to participate, provided fewer than half of the ratings, or provided responses lacking any variance (i.e., "straight-lining" or providing the same rating for everything). Responses from 201 respondents were removed from the data set, yielding a usable number of 720 responses. Of those respondents who were removed, four were removed due to not agreeing to participate, 196 were removed due to providing fewer than half of the ratings, and one was removed due to a lack of variance in their responses.

Below are the average importance and frequency ratings for each content area, followed by the responses to the demographic questions.

Knowledge Statements		Importance	Frequency
1	Principles and Practice of Anesthesia		
1A	Preoperative Evaluation	3.92	3.89
1B	Administration of Anesthesia	4.88	4.93
1C	Fluid Management	4.30	4.62
1D	Operating Room Environment	4.15	4.67
1E	Professionalism	4.44	4.78
1F	Emotional Intelligence	4.17	4.49



Knowledge Statements		Importance	Frequency
2	Physiology, Pathophysiology, Management		
2A	Cardiovascular	4.33	4.05
2B	Hematology and Coagulation	3.84	3.63
2C	Respiratory System	4.64	4.71
2D	Neurosciences and Neuromuscular	3.91	3.91
2E	Renal, Genital, and Urologic	3.68	3.90
2F	Hepatic and Gastrointestinal	3.61	3.76
2G	Metabolism and Endocrine	3.48	3.56
3	Instrumentation, Monitoring, Anesthetic Delivery Systems, and Physics		
3A	Cardiovascular Monitoring	4.31	4.17
3B	Neurophysiologic Monitoring	3.37	3.33
3C	Respiratory Monitoring	4.68	4.78
3D	Anesthesia Circuits	3.86	4.30
3E	Anesthesia Machine	4.17	4.60
3F	Physics and Mathematics	3.22	3.28
4	Subspecialty Care		
4A	Obstetrics and Perinatal Management	2.87	2.22
4B	Pediatrics and the Neonatal Period	3.03	2.11
4C	Geriatric	3.81	4.10
4D	Ear, Nose, and Throat (ENT), Plastic Surgery, and Ophthalmologic	3.56	3.68
4E	Orthopedics	3.80	4.34
4F	Anesthesia Outside the Operating Room	3.73	3.66
4G	Trauma	3.20	2.29
4H	Bariatrics	3.08	2.95
4I	Cardiothoracic and Vascular Surgery	3.58	2.92
4J	Ambulatory Surgery	3.73	4.10
4K	Gastrointestinal (GI)	3.53	3.90
4L	Neurosurgery	3.59	3.18
4M	Genitourinary	3.29	3.58
4N	Critical Care	3.04	2.43
5	Pharmacology		
5A	Pharmacokinetics and Pharmacodynamics	4.14	4.25
5B	Inhalational Anesthetics	4.30	4.70
5C	Anesthetic Maintenance Agents	4.38	4.68
5D	Local Anesthetics	3.83	3.92
5E	Cardiovascular Drugs	4.34	4.07
5F	Adjunct to Anesthesia	3.81	4.04
6	Regional Anesthesia and Pain Management		
6A	Chronic and Acute Pain Management	2.35	2.07
6B	Peripheral Nerve Blocks	2.62	2.14
6C	Neuraxial Blocks	3.04	2.55
6D	Anatomical Landmarks	2.93	2.74

1 For how many years have you actively worked as a Certified Anesthesiologist Assistant? (Enter 0 if less than one year.)	
Mean =	10.77
SD =	9.08
Min =	0.00
Max =	48.00

2 In what year did you complete your anesthesiologist assistant training program?	n	%
1973	1	0.1%
1974	1	0.1%
1976	1	0.1%
1977	2	0.3%
1978	3	0.4%
1980	1	0.1%
1981	1	0.1%
1982	5	0.7%
1983	1	0.1%
1985	2	0.3%
1986	1	0.1%
1987	1	0.1%
1988	7	1.0%
1989	2	0.3%
1990	4	0.6%
1991	6	0.8%
1992	3	0.4%
1993	7	1.0%
1994	9	1.3%
1995	7	1.0%
1996	9	1.3%
1997	10	1.4%
1998	12	1.7%
1999	13	1.8%
2000	5	0.7%
2001	8	1.1%
2002	8	1.1%
2003	19	2.6%
2004	12	1.7%
2005	15	2.1%
2006	11	1.5%
2007	14	1.9%
2008	29	4.0%
2009	32	4.4%
2010	29	4.0%
2011	28	3.9%
2012	44	6.1%
2013	44	6.1%



2	In what year did you complete your anesthesiologist assistant training program?	n	%
	2014	55	7.6%
	2015	60	8.3%
	2016	39	5.4%
	2017	47	6.5%
	2018	30	4.2%
	2019	33	4.6%
	2020	48	6.7%
	2021	1	0.1%

3 **What was the name of your training program?**
[there were numerous variations of same or similar program names]

4	What is your primary practice setting?	n	%
	Ambulatory care setting	54	7.5%
	Community hospital (non-profit)	233	32.4%
	Community hospital (profit)	207	28.8%
	County hospital	13	1.8%
	Office-based private practice	3	0.4%
	State hospital	8	1.1%
	University medical center	190	26.4%
	Other (please specify)	12	1.7%

5	What is your specialty area?	n	%
	Ambulatory	21	2.9%
	Cardiac	63	8.8%
	GI	1	0.1%
	Neuro	10	1.4%
	None/General practice	464	64.4%
	OB/GYN	9	1.3%
	Orthopedic	23	3.2%
	Outpatient	14	1.9%
	Pain clinic	2	0.3%
	Pediatric	54	7.5%
	Trauma	17	2.4%
	Other (please specify)	42	5.8%

6	In which state do you primarily work?	<i>n</i>	%
	Alabama	5	0.7%
	Colorado	31	4.3%
	District of Columbia	19	2.6%
	Florida	109	15.1%
	Georgia	272	37.8%
	Indiana	15	2.1%
	Michigan	8	1.1%
	Missouri	43	6.0%
	New Mexico	15	2.1%
	North Carolina	13	1.8%
	Ohio	81	11.3%
	Oklahoma	4	0.6%
	South Carolina	11	1.5%
	Texas	50	6.9%
	Vermont	7	1.0%
	Washington	1	0.1%
	Wisconsin	36	5.0%

7	Do you work at a facility that has a residency program?	<i>n</i>	%
	Yes	308	42.8%
	No	412	57.2%

8	Does your facility take Anesthesiologist Assistant (AA) students?	<i>n</i>	%
	Yes	627	87.1%
	No	93	12.9%

Development of Exam Specifications

The Job Analysis Committee met on 30 April 2021 to review the results of the survey, finalize the tasks and knowledge that would comprise the next Examination Content Outline, 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 the target population.

The committee agreed that there were sufficiently high ratings to retain all the content areas. However, in their review of the results of the ratings, they elected to make the following text changes. Most changes reflect corrections of typographical errors or moves toward consistency of verbiage. Two changes (1E and 1F) were done to use more role-specific verbiage but retain the original intent of the content area.

	Old Text	New Text
1E	Professionalism	Evidence-Based Practice
1F	Emotional Intelligence	Interdisciplinary Care Coordination
2C	Respiratory System	Respiratory
2D	Neuroscience and Neuromuscular	Neurological and Neuromuscular
3	Instrumentation, Monitoring, Anesthetic Delivery Systems, and Physics	Instrumentation, Monitoring, and Anesthetic Delivery Systems
4B	Pediatrics and the Neonatal Period	Pediatrics and Neonatal
4D	Ear, Nose, and Throat (ENT), Plastic Surgery, and Ophthalmologic	Ear, Nose, and Throat (ENT), Plastic Surgery, and Ophthalmology
4H	Bariatrics	Bariatric Surgery
4L	Neurosurgery	Neurosurgery
5F	Adjunct to Anesthesia	Adjuncts to Anesthesia

The committee then reviewed the draft content weighting, discussing any adjustments necessary to align the number of items per content area for adequate content coverage on the assessment. The draft content weighting was developed by calculating the criticality value (mean importance rating multiplied by the mean frequency rating) and then determining a percentage weight based on the relative weight of the criticality value for each content area.

The committee determined that 150 scored items for the CAA exam would provide sufficient coverage of the exam content. As such, the percentage calculated was applied to 150 items. The committee then reviewed the resulting item allocation weights, increasing or decreasing the number of items to better reflect what content should be assessed by the CAA exam. The CDQ exam reflects the CAA exam, but with a one-third reduction of content in each content domain except domain three where the numbers match exactly.

Below are the criticality values, percentage weights, the draft item allocation (based on the percentage weight), and the final item allocation for CAA and CDQ exams. The final Examination Content Outline can be found in Appendix E.

Knowledge Statements		Criticality	% Weight
1	Principles of Anesthesia		
1A	Preoperative Evaluation	15.25	2.48%
1B	Administration of Anesthesia	24.05	3.90%
1C	Fluid Management	19.87	3.22%
1D	Operating Room Environment	19.41	3.15%
1E	Evidence-Based Practice	21.21	3.44%
1F	Interdisciplinary Care Coordination	18.73	3.04%
2	Physiology, Pathophysiology, and Management		
2A	Cardiovascular	17.54	2.85%
2B	Hematology and Coagulation	13.95	2.26%
2C	Respiratory	21.82	3.54%
2D	Neurological and Neuromuscular	15.30	2.48%
2E	Renal, Genital, and Urologic	14.34	2.33%
2F	Hepatic and Gastrointestinal	13.55	2.20%
2G	Metabolism and Endocrine	12.40	2.01%
3	Instrumentation, Monitoring, and Anesthetic Delivery Systems		
3A	Cardiovascular Monitoring	17.97	2.92%
3B	Neurophysiologic Monitoring	11.22	1.82%
3C	Respiratory Monitoring	22.36	3.63%
3D	Anesthesia Circuits	16.62	2.70%
3E	Anesthesia Machine	19.21	3.12%
3F	Physics and Mathematics	10.55	1.71%
4	Subspecialty Care		
4A	Obstetrics and Perinatal Management	6.37	1.03%
4B	Pediatrics and Neonatal	6.39	1.04%
4C	Geriatric	15.63	2.54%
4D	Ear, Nose, and Throat (ENT), Plastic Surgery, and Ophthalmology	13.09	2.12%
4E	Orthopedics	16.50	2.68%
4F	Anesthesia Outside the Operating Room	13.67	2.22%
4G	Trauma	7.31	1.19%
4H	Bariatric Surgery	9.10	1.48%
4I	Cardiothoracic Surgery	10.43	1.69%
4J	Ambulatory Surgery	15.28	2.48%
4K	Gastrointestinal (GI)	13.76	2.23%
4L	Neurosurgery	11.40	1.85%
4M	Genitourinary	11.79	1.91%
4N	Critical Care	7.37	1.20%

Knowledge Statements		Criticality	% Weight
5	Pharmacology		
5A	Pharmacokinetics and Pharmacodynamics	17.60	2.86%
5B	Inhalational Anesthetics	20.24	3.28%
5C	Anesthetic Maintenance Agents	20.47	3.32%
5D	Local Anesthetics	15.02	2.44%
5E	Cardiovascular Drugs	17.68	2.87%
5F	Adjuncts to Anesthesia	15.38	2.50%
6	Regional Anesthesia and Pain Management		
6A	Chronic and Acute Pain Management	4.87	0.79%
6B	Peripheral Nerve Blocks	5.60	0.91%
6C	Neuraxial Blocks	7.77	1.26%
6D	Anatomical Landmarks	8.03	1.30%

Appendix A

Subject Matter Experts

Job Analysis Committee

NAME	RELEVANT CREDENTIALS	YEARS OF EXPERIENCE	EMPLOYER/AFFILIATION	JOB TITLE	GEOGRAPHIC LOCATION
Camille Meadows	CAA	6	Alliance Partners, LLC	CAA	OH
Dave Biel	CAA	19	UF Health	CAA	FL
Gregg Mastropolo	CAA	24	American Academy of Anesthesiologist Assistants	President, Clinical Assistant Professor	NY
Jen Barker	CAA, MSA	18	Medical College of Wisconsin	Professor	WI
Jessie Sabers	CAA	4	Children's Medical Center Dallas	CAA	TX
Koty Price	CAA	7	Atlantic Coast Anesthesia Services PC	CAA	SC
Lee Clintsman	CAA, MHSc	11	Medical College of Wisconsin	Professor	WE
MacKenzie Schumer	CAA	7	Children's Hospital Colorado	CAA	CO
Ralph DaPaah	CAA, MHSc	10	American Academy of Anesthesiologist Assistants	Board of Directors, CAA	GA
Saral Patel	CAA, MMSc	21	Case Western Reserve University	Clinical Instructor	DC

Interviewees

NAME	RELEVANT CREDENTIALS	YEARS OF EXPERIENCE	EMPLOYER/AFFILIATION	JOB TITLE	GEOGRAPHIC LOCATION
Matt Ciotti	CAA	13	Anesthesia Associates of Cincinnati	CAA	OH
Paul McHorse	CAA	10	Baylor Scott and White Healthcare	CAA	TX
Stephen Evancovich	CAA	8	Indiana University	CAA	IN

Appendix B

Job Analysis Presentation



Job Analysis

PSI Certification Psychometrics

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Objectives



Develop a description of the profession

- Define the relevant tasks
- Define the relevant knowledge



Develop all other elements for a survey

- Develop background information questions
- Review rating scales



Establish linkages

- Identify meaningful connections between the task and knowledge lists



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Job Analysis Process

1. Prepare Draft Materials
2. Conduct Job Analysis Meeting
3. Conduct Pilot Survey
4. Conduct Live Survey
5. Perform Data Analysis
6. Create Exam Specifications
7. Develop Summary Report

← You Are Here



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Introduction



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Purpose of Credentialing Examinations

- To protect the public from harm caused by incompetent professional practice
- To assess professional competence in terms of the knowledge and skills required to successfully perform the tasks associated with the job role
- To establish and apply a consistent standard that reflects the competency level required of practitioners who meet the eligibility requirements
- To provide a valid and reliable means of identifying those who are competent to practice in the profession



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What is a Job Analysis?

“ Procedure to identify the content of a job in terms of activities involved and attributes or requirements needed to perform the activities. ”

This is the primary source of content validity for a credentialing assessment

This is the process by which the Examination Specifications are created

A representative list of knowledge and tasks associated with the job is developed



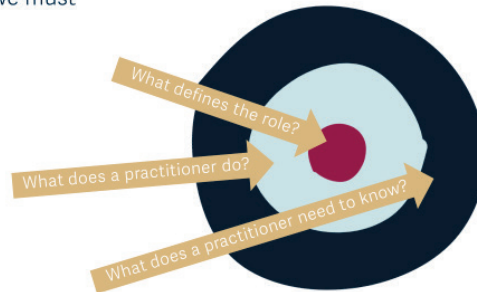
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Multiple Levels of Analysis

To create a comprehensive and accurate representation of the job role, we must identify:

- Target Population
- Tasks Performed
- Knowledge Required



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Terminology

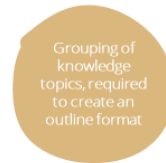
Tasks



Knowledge

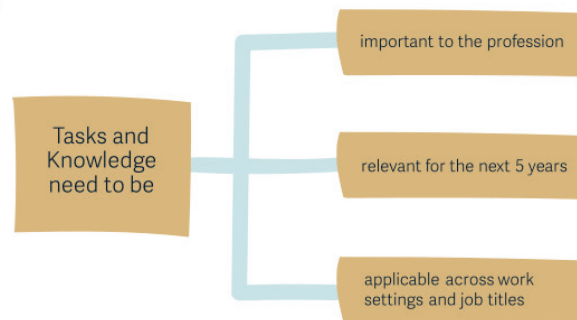


Content Domains (and subdomains)



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Requirements for Tasks and Knowledge



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Rating Scales

Importance	How important is this [task / knowledge] to the job role?	0 - Not Relevant 1 - Minimally Important 2 - Somewhat Important 3 - Moderately Important 4 - Very Important 5 - Critically Important
Frequency	How frequently is this [task performed / knowledge used] in the job role?	0 - Not Relevant 1 - Rarely 2 - Seldom 3 - Occasionally 4 - Frequently 5 - Very Frequently



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Why Are You Here?

Subject Matter Experts (SMEs)

You are here to provide your content expertise and your professional experience

Facilitators

We are here to guide you through the process

Client Representatives

You are here to provide additional background information and the certifying body's perspective



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Questions?



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Linkage Process




Linkage Analysis

Knowledge vs. Task

- The list of Knowledge areas is used to delineate what content will be directly assessed by the exam
- Tasks provide additional context for the application of those knowledge and skills

Purpose of Linkage Analysis

- To establish evidence that the Knowledge areas are applicable to the Tasks
- To determine any potential gaps in either inventory



Linkage Matrix

- We will identify connections among tasks and knowledge

The Outcome Looks Something Like This



Each linkage represents that the knowledge is required in order to complete the task

	T1	T2	T3	T4	T5
1A1	X				
1A2		X			
1A3		X		X	
1B1			X		
1B2			X		X
1C1				X	
1C2				X	
2A1	X		X		
2A2		X			
2B1			X	X	
2B2		X			
2B3			X	X	X
2B4		X	X		



Linkage Thought Process

Doesn't everything apply to everything?

- Not exactly

	Grilling	Baking
Knife Techniques	X	-

Consider this example:

- I need knowledge of **Knife Techniques** to **Prepare Ingredients For Grilling**
- I don't need knowledge of **Knife Techniques** to **Mix Baking Ingredients**



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Questions?



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Appendix C

Survey Text



NCCAA 2021 Job Analysis Survey

The purpose of this survey is to identify knowledge reflective of the role of a Certified Anesthesiologist Assistant (CAA). The results of this survey will be used to help develop the specifications for the National Commission for Certification of Anesthesiologist Assistants (NCCAA) certification exam. Periodic surveys of practice are necessary to gather empirical data to validate the tasks and specialized knowledge required to practice as a certified professional in the field.

The survey will likely require about 10 minutes to complete. You can complete each part of the survey in separate sittings at the same computer or device. Please be aware that you must completely finish a page before clicking on "Next" to save your responses up to that point. There is no limit on the number of times you can use the link to go back to the survey before clicking on "Done" to submit your survey.

Your individual responses will be kept confidential and will be combined with those of other respondents. Only staff persons from PSI Services and NCCAA will have access to the data collected. Aggregated data from this survey will be published in a report that summarizes the process used to develop the specifications for the NCCAA exam. For more information about PSI's privacy and data protection policy, please [click here](#).

Please direct all inquiries to njorion@psionline.com.

*** Do you agree to take part in this survey?**

- Yes
- No



National Commission for
Certification of
Anesthesiologist Assistants

NCCAA 2021 Job Analysis Survey

Practitioner Definition

This job analysis is being conducted to identify significant tasks and knowledge required of the Certified Anesthesiologist Assistant (CAA). The NCCAA defines these roles as follows:

The National Commission for Certification of Anesthesiologist Assistants (NCCAA) certification is designed for entry-level professionals who have completed a master's program in anesthesia. Certified Anesthesiologist Assistants (CAA) work under the direction of licensed physician anesthesiologists and as part of anesthesia care team to design and implement anesthesia care plans.

*** At any time in the last 12 months, have you been employed in this role?**

Yes

No



NCCAA 2021 Job Analysis Survey

Background Info

*** For how many years have you actively worked as a Certified Anesthesiologist Assistant? (Enter 0 if less than one year.)**

*** In what year did you completed your anesthesiologist assistant training program?**

*** What was the name of your training program?**

*** What is your primary practice setting?**

- Ambulatory care setting
- Community hospital (non-profit)
- Community hospital (profit)
- University medical center
- Military hospital
- Federal hospital
- State hospital
- County hospital
- Office-based private practice
- Other (please specify)

*** What is your specialty area?**

- None/General practice
- Ambulatory
- Cardiac
- GI
- GIDU
- Neuro
- OB/GYN
- Orthopedic
- Out patient
- Pain clinic
- Pediatric
- Trauma
- Other (please specify)

*** In which state do you primarily work?**

*** Do you work at a facility that has a residency program?**

- Yes
- No

*** Does your facility take Anesthesiologist Assistant (AA) students?**

- Yes
- No



NCCAA 2021 Job Analysis Survey

Rating Scales

For each knowledge statements on the following pages, please answer TWO questions:

Frequency - How frequently do you use this knowledge in **your** role as a CAA?

- Not Relevant / Not Part of Practice (i.e., "I don't do this.")
- Rarely
- Seldom
- Occasionally
- Frequently
- Very Frequently

Importance - How important is this knowledge in **your** role as a CAA?

- Not Relevant / Not Part of Practice (i.e., "I don't do this.")
- Minimally Important
- Somewhat Important
- Moderately Important
- Very Important
- Critically Important



National Commission for
Certification of
Anesthesiologist Assistants

NCCAA 2021 Job Analysis Survey

If you are completing this survey on a mobile device, the following questions may display better if you rotate your device to landscape view.



NCCAA 2021 Job Analysis Survey

Knowledge Ratings

Please indicate the frequency of performance and importance of the following knowledge statements in your CAA role.

PRINCIPLES AND PRACTICE OF ANESTHESIA

Frequency	Importance
Preoperative Evaluation	
<input type="text"/>	<input type="text"/>
Administration of Anesthesia	
<input type="text"/>	<input type="text"/>
Fluid Management	
<input type="text"/>	<input type="text"/>
Operating Room Environment	
<input type="text"/>	<input type="text"/>
Professionalism	
<input type="text"/>	<input type="text"/>
Emotional Intelligence	
<input type="text"/>	<input type="text"/>



NCCAA 2021 Job Analysis Survey

Knowledge Ratings

Please indicate the frequency of performance and importance of the following knowledge statements in your CAA role.

PHYSIOLOGY, PATHOPHYSIOLOGY, MANAGEMENT

Frequency	Importance
Cardiovascular	
<input type="text"/>	<input type="text"/>
Hematology & Coagulation	
<input type="text"/>	<input type="text"/>
Respiratory System	
<input type="text"/>	<input type="text"/>
Neurosciences & Neuromuscular	
<input type="text"/>	<input type="text"/>
Renal, Genital, & Urologic	
<input type="text"/>	<input type="text"/>
Hepatic & Gastrointestinal	
<input type="text"/>	<input type="text"/>
Metabolism & Endocrine	
<input type="text"/>	<input type="text"/>



NCCAA 2021 Job Analysis Survey

Knowledge Ratings

Please indicate the frequency of performance and importance of the following knowledge statements in your CAA role.

INSTRUMENTATION, MONITORING, ANESTHETIC DELIVERY SYSTEMS, PHYSICS

Frequency	Importance
Cardiovascular Monitoring	
<input type="text"/>	<input type="text"/>
Neurophysiologic Monitoring	
<input type="text"/>	<input type="text"/>
Respiratory Monitoring	
<input type="text"/>	<input type="text"/>
Anesthesia Circuits	
<input type="text"/>	<input type="text"/>
Anesthesia Machine	
<input type="text"/>	<input type="text"/>
Physics & Mathematics	
<input type="text"/>	<input type="text"/>



NCCAA 2021 Job Analysis Survey

Knowledge Ratings

Please indicate the frequency of performance and importance of the following knowledge statements in your CAA role.

SUBSPECIALTY CARE

Frequency	Importance
Obstetrics & Perinatal Management	
<input type="text"/>	<input type="text"/>
Pediatrics & The Neonatal Period	
<input type="text"/>	<input type="text"/>
Geriatric	
<input type="text"/>	<input type="text"/>
Ear, Nose, & Throat (ENT), Plastic Surgery, Ophthalmic	
<input type="text"/>	<input type="text"/>
Orthopedics	
<input type="text"/>	<input type="text"/>
Anesthesia Outside the OR	
<input type="text"/>	<input type="text"/>
Trauma	
<input type="text"/>	<input type="text"/>
Bariatrics	
<input type="text"/>	<input type="text"/>
Cardiothoracic & Vascular surgery	

Frequency	Importance
<input type="text"/>	<input type="text"/>
Ambulatory surgery	
<input type="text"/>	<input type="text"/>
Gastrointestinal (GI)	
<input type="text"/>	<input type="text"/>
Neurosurgery	
<input type="text"/>	<input type="text"/>
Genitourinary	
<input type="text"/>	<input type="text"/>
Critical Care	
<input type="text"/>	<input type="text"/>



NCCAA 2021 Job Analysis Survey

Knowledge Ratings

Please indicate the frequency of performance and importance of the following knowledge statements in your CAA role.

PHARMACOLOGY

Frequency

Importance

Pharmacokinetics & Pharmacodynamics

Inhalational Anesthetics

Anesthetic Maintenance Agents

Local Anesthetics

Cardiovascular Drugs

Adjuncts to Anesthesia



NCCAA 2021 Job Analysis Survey

Knowledge Ratings

Please indicate the frequency of performance and importance of the following knowledge statements in your CAA role.

REGIONAL ANESTHESIA AND PAIN MANAGEMENT

Frequency	Importance
Chronic & Acute Pain Management	
<input type="text"/>	<input type="text"/>
Peripheral Nerve Blocks	
<input type="text"/>	<input type="text"/>
Neuraxial Blocks	
<input type="text"/>	<input type="text"/>
Anatomical Landmarks	
<input type="text"/>	<input type="text"/>



National Commission for
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Anesthesiologist Assistants

NCCAA 2021 Job Analysis Survey

Additional Comments

What important knowledge statements from your job role, if any, do you think are missing from this list?

Please provide any additional comments about the survey here.



National Commission for
Certification of
Anesthesiologist Assistants

NCCAA 2021 Job Analysis Survey

Thank you for completing the NCCAA Job Analysis survey!

If you need to review your answers, you can use the 'Prev' button below to move back through the survey. To submit your results, click on the 'Done' button at the bottom of the screen.

Appendix D

Survey Invitation Email

NCCAA 2021 Job Analysis Survey

The purpose of this survey is to identify tasks and knowledge reflective of certified anesthesiologist assistants (CAA). The results of this survey will be used to help develop the specifications for the CAA certification exam.

The survey will likely require 10 minutes to complete. You can complete each part of the survey in separate sittings at the same computer. Please be aware that you must completely finish a page before clicking on "Next" to save your responses up to that point. There is no limit on the number of times you can use the link to go back to the survey before clicking on "Done" to submit your survey.

Your individual responses will be kept confidential and will be combined with those of other respondents. Only staff persons from PSI Services and the National Commission for Certification of Anesthesiologist Assistants (NCCAA) will have access to the data collected. Aggregated data from this survey will be published in a report that summarizes the process used to develop the specifications for the CAA certification exam. For more information about PSI's privacy and data protection policy, please click here:
<https://www.psionline.com/privacy/privacy-policy/>

[Begin Survey](#)

Please do not forward this email as its survey link is unique to you.
[Email Us](#) | [Unsubscribe](#)



Appendix E

Exam Content Outline

1	Principles of Anesthesia
1A	Preoperative Evaluation
1B	Administration of Anesthesia
1C	Fluid Management
1D	Operating Room Environment
1E	Evidence-Based Practice
1F	Interdisciplinary Care Coordination
2	Physiology, Pathophysiology, and Management
2A	Cardiovascular
2B	Hematology and Coagulation
2C	Respiratory
2D	Neurological and Neuromuscular
2E	Renal, Genital, and Urologic
2F	Hepatic and Gastrointestinal
2G	Metabolism and Endocrine
3	Instrumentation, Monitoring, and Anesthetic Delivery Systems
3A	Cardiovascular Monitoring
3B	Neurophysiologic Monitoring
3C	Respiratory Monitoring
3D	Anesthesia Circuits
3E	Anesthesia Machine
3F	Physics and Mathematics
4	Subspecialty Care
4A	Obstetrics and Perinatal Management
4B	Pediatrics and Neonatal
4C	Geriatric
4D	Ear, Nose, and Throat (ENT), Plastic Surgery, and Ophthalmology
4E	Orthopedics
4F	Anesthesia Outside the Operating Room
4G	Trauma
4H	Bariatric Surgery
4I	Cardiothoracic Surgery
4J	Ambulatory Surgery
4K	Gastrointestinal (GI)
4L	Neurosurgery
4M	Genitourinary
4N	Critical Care
5	Pharmacology
5A	Pharmacokinetics and Pharmacodynamics
5B	Inhalational Anesthetics
5C	Anesthetic Maintenance Agents
5D	Local Anesthetics
5E	Cardiovascular Drugs
5F	Adjuncts to Anesthesia

6 Regional Anesthesia and Pain Management

- 6A Chronic and Acute Pain Management
- 6B Peripheral Nerve Blocks
- 6C Neuraxial Blocks
- 6D Anatomical Landmarks



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