Job Analysis

Pain Management Pharmacy

April 2024

Board of Pharmacy Specialties®

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Executive Summary

The Board of Pharmacy Specialties (BPS) performed a job analysis, a multi-method approach into defining a job role or competency area in terms of the relevant tasks and associated knowledge areas, in 2024 to develop the content outline and other specifications for the specialty certification examination for pharmacists who specialize in pain management pharmacy. In accordance with relevant professional and accreditation standards, the study consisted of three major phases:

1. Definition of tasks and knowledge areas
2. Development, administration, and analysis of a survey
3. Finalization of the exam content outline

This report provides evidence for the exam content outline developed and its applicability to the pain management pharmacy specialty practice area. The outcome of this study was the creation of an examination blueprint that will be used to construct the pain management pharmacy specialty certification examination such that it aligns with the competencies identified and in equal proportions across all forms (versions) of the examination.

Examination Content Domains and Subdomains		
1	**Pain Management**	**18%**
1A	Principles of Pain	9%
1B	Pain Experience	9%
2	**Therapeutics and Patient Management**	**59%**
2A	Patient Assessment	15%
2B	Therapeutic Implementation	24%
2C	Therapeutic Outcomes and Monitoring	20%
3	**Professional Practice**	**23%**
3A	Quality of Care	12%
3C	Practice Management	11%

Introduction

The Board of Pharmacy Specialties (BPS) performed a job analysis in 2024 to develop the content outline and other specifications for the specialty certification examination for pharmacists who specialize in pain management pharmacy.

A job analysis[1], sometimes called a role delineation study or practice analysis in healthcare certification settings, is a multi-method approach to defining a job role or competency area in terms of the relevant tasks or work activities and the associated competencies (operationalized as knowledge, skills, and abilities) and/or other attributes. Indeed, job analysis can also be thought of as referring to a family of related approaches to establishing the foundations of content validity[2] for an assessment[3], in this case applied to the assessment of competencies associated with a specialty area in the licensed practice of pharmacy. A job analysis is considered a multi-method approach because it incorporates both qualitative and quantitative evidence in support of the definition the practice area in question. The job analysis consisted of three major phases:

1. Definition of tasks and knowledge areas, organized in a content outline format and completed by an assembled panel of qualified pharmacists who are currently engaged in pain management pharmacy
2. Development, administration, and analysis of a survey to other qualified pharmacists who are currently engaged in pain management pharmacy, requesting their ratings either endorsing the inclusion or exclusion of each task and knowledge area identified by the committee
3. Finalization of the exam content outline, completed by the assembled panel and with consideration given to the survey results to help determine the retention, discard, or editing of knowledge and task lists, as well as the relative weights assigned to each content area

The study described in this report was conducted according to the Standards for Educational & Psychological Testing[4] and applicable accreditation standards (NCCA[5] and ISO/IEC 17024[6]). The subsequent sections describe the methods, results, and outcomes of the study, complemented by appendices which describe the qualifications and professional characteristics of the subject matter experts who contributed to this study, the actual text of the survey administered, and the final exam content outline produced by this study.

[1] Sackett, P.R., Laczo, R.M. (2003). Job and Work Analysis. Handbook of Psychology.
[2] Cronbach, L.J., Meehl, P.E. (1955). Construct Validity in Psychological Tests. Psychological Bulletin, 52(4), 281-302.
[3] Kane, M.T. (2013). Validating the Interpretations and Uses of Test Scores. Journal of Educational Measurement, 50(1), 1-73.
[4] American Educational Research Association, the American Psychological Association, National Council on Measurement in Education. (2014). Standards for Educational & Psychological Testing.
[5] National Commission for Certifying Agencies. (2014). Standards for the Accreditation of Certification Programs.
[6] International Organization for Standardization, International Electrotechnical Commission. (2012). Conformity Assessment: General Requirements for Bodies Operating Certification of Persons.

1. Definition of Tasks and Knowledge

BPS assembled a panel that consisted of 26 subject-matter experts in pain management pharmacy, who were representative of the diversity of professional characteristics within the specialty with respect to practice setting, patient populations served, years of experience, and geographic dispersion within the United States. Five additional subject-matter experts in pain management pharmacy were interviewed individually on a 1-hour teleconference. See Appendix A for the qualifications and professional characteristics of the job analysis panel and interviewees.

The interviews took place on 7-12 December 2023. The interview questions focused on changes in the specialty area, key competency areas, and any limitations of the outgoing examination content outline that should be addressed by the job analysis.

The panel met via teleconference on two occasions to develop, define, and update the tasks performed and knowledge required to practice as a specialist in pain management pharmacy. The dates of the meetings were 29 January 2024 and 9 February 20241.

On the first session, the panelists were oriented to the objectives of the study and the meeting, and then were presented a draft examination content outline and list of associated tasks that drew from the outgoing examination content outline and the interview notes. See Appendix B for the presentation used to orient the job analysis panelists.

The panel developed 15 task statements that describe the work activities performed by a pain management pharmacist.

1	Evaluate patient medical history, treatment history, present illness, clinical status, social determinants of health, and other relevant patient characteristics
2	Establish treatment goals in collaboration with the patient, caregivers, and/or interprofessional healthcare team
3	Develop person-centered plans of care in alignment with evidence-based medicine, practice guidelines, and treatment goals
4	Optimize treatment selection and adherence based on patient characteristics and treatment characteristics
5	Monitor and evaluate response to plans of care and progress toward treatment goals
6	Modify plans of care in response to clinical status, treatment goals, and other relevant patient factors
7	Utilize clinical decision support and other health information technology to optimize treatment decisions
8	Develop and/or provide healthcare education and counseling to patients, caregivers, and/or members of the general public
9	Develop and/or provide healthcare education and support to pharmacists, learners, and other members of the interprofessional healthcare team
10	Participate in healthcare quality improvement, safety, and/or public health initiatives
11	Evaluate, establish, and/or align policies and practices according to accreditation standards, regulatory requirements, and evidence-based practice

12	Develop healthcare protocols, clinical decision support, medication formularies, and pain pharmacy services
13	Develop, lead, and/or participate in pain stewardship (e.g., opioid stewardship) programs
14	Engage in professional development in pain management practice, such as professional advocacy, committee involvement, scholarly activities, and continuing education
15	Evaluate research literature and other published information to determine the quality and applicability to pain and symptom management practice

The panel identified three content domains that describe the key high-level components of pain management pharmacy. Across the three content domains, the panel identified seven content sub-domains and developed 38 knowledge areas that describe specific job knowledge associated with the practice of pain management pharmacy. In some cases, the panelists wrote examples in parenthesis, which are meant to be non-exhaustive, to help better illustrate the intended scope of the knowledge area listed.

1	**Pain Management**
1A	Principles of Pain
1A1	Etiology and Pathophysiology of Pain
1A2	Pain Classification (e.g., neuropathic, nociceptive, nociplastic, acute, chronic)
1A3	Conditions Commonly Associated with Pain
1B	Pain Experience
1B1	Presentation of Pain Symptoms
1B2	Patient Experiences Related to Pain (e.g., stigma, bias, biopsychosocial model)
1B3	Pain and Symptom Assessment Tools (e.g., FACES, Edmonton scale, FLACC, PEG, PROMIS-6B)
2	**Therapeutics and Patient Management**
2A	Patient Assessment
2A1	Clinical Assessment and Screening
2A2	Patient Communication and Engagement Techniques (e.g., MI, NURSE, SPIKES, REMAP, difficult conversations)
2A3	Laboratory and Diagnostic Testing
2A4	Pharmacodynamics, Pharmacokinetics, and Pharmacogenomics
2A5	Social Determinants of Health
2A6	Risk Assessment (e.g., ORT, SOAP, DIRE, RIOSORD, CRAFFT)
2B	Therapeutic Implementation
2B1	Comprehensive Person-Centered Care Planning (e.g., goals of care, shared decision-making)
2B2	Types of Care (e.g., acute pain, chronic pain, substance use disorder, palliative and end-of-life)
2B3	Opioid Pharmacologic Treatments
2B4	Non-Opioid Pharmacologic Treatments
2B5	Medication Delivery (e.g., routes of administration, delivery devices, anatomic alterations, intrathecal pumps)
2B6	Non-Pharmacologic Treatments and Lifestyle Modification (e.g., CBT, acupuncture, acceptance therapy)
2B7	Patient and Caregiver Education and Counseling

2B8	Interprofessional Care Coordination
2C	Therapeutic Outcomes and Monitoring
2C1	Therapeutic Targets
2C2	Therapeutic and Physiological Monitoring
2C3	Risk Mitigation (e.g., PDMP, pill counting, controlled substance agreements, storage and disposal, toxicology, suicide prevention)
2C4	Adverse Drug Events and Drug Interactions
2C5	Medication Adherence (e.g., addressing barriers, measurement tools)
2C6	Medication Reconciliation
2C7	Continuity of Care (e.g., referrals, transitions of care, case management)
3	Professional Practice
3A	Quality of Care
3A1	Clinical Practice Guidelines
3A2	Public and Population Health
3A3	Ethics and Patient Advocacy
3A4	Drug Information Resources and Databases
3A5	Pain Stewardship (e.g., opioid stewardship, resource utilization, clinical outcomes, safety)
3B	Practice Management
3B1	Professional Practice Standards and Regulations
3B2	Collaborative Practice Agreements and Independent Prescribing
3B3	Research Methods and Statistics
3B4	Quality Management and Process Improvement
3B5	Clinical Informatics (e.g., clinical decision support, alerts, workflows)
3B6	Pharmacoeconomics (e.g., formulary management, cost effectiveness, reimbursement and billing)

The panel also helped create a definition of the pain management pharmacist, the target population for the pain management pharmacy credential, and a statement describing the purpose of the pain management pharmacy credentialing program.

The BPS Board-Certified Pain Management Pharmacist program is a credential for pharmacists who provide integrated, comprehensive, and accessible healthcare services to patients experiencing pain and associated symptoms.
The purpose of the BPS Board-Certified Pain Management Pharmacist program is to validate that the pharmacist has the advanced knowledge, skills, and experience necessary to optimize the safety and effectiveness of pain pharmacotherapy and supportive care.

The panel also refined a list of demographic questions to be provided to survey respondents which would help better understand the professional characteristics of the respondent sample, which is described in more detail in the next section.

Lastly, the panel engaged in a linkage analysis, which is an exercise to identify the inter-relationships among the knowledge areas and tasks. Each panelist was asked to individually develop a linkage matrix in which tasks are listed as columns and knowledge areas as rows, and an x-mark indicating that the knowledge area is required for performance of the task. Individual matrices were aggregated such that any proposed linkage (x-mark) by more than half of the panelists was counted in the final (consensus) linkage matrix.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1															
1A															
1A1	X														
1A2	X	X													
1A3	X	X													
1B															
1B1	X														
1B2	X	X	X												
1B3	X				X										
2															
2A															
2A1	X	X			X	X									
2A2	X	X	X		X	X		X							
2A3	X				X	X									
2A4	X			X	X	X									
2A5	X	X	X			X									
2A6	X				X	X									
2B															
2B1	X	X	X	X	X	X									
2B2	X	X		X		X									
2B3	X		X	X	X	X									
2B4	X		X	X	X	X									
2B5	X		X	X	X	X									
2B6	X		X	X	X	X									
2B7			X	X	X	X		X							
2B8		X	X												
2C															
2C1			X	X	X	X		X	X						

2C2					X	X										
2C3	X	X		X	X	X										
2C4	X				X	X		X	X							
2C5	X				X	X										
2C6	X				X	X										
2C7			X		X	X										
3																
3A																
3A1			X						X		X		X			
3A2									X	X	X					
3A3									X		X					
3A4							X		X							X
3A5									X		X		X			
3B																
3B1									X		X	X		X		
3B2																
3B3										X						X
3B4										X	X	X	X			X
3B5							X				X	X				
3B6											X	X				

2. Survey Administration and Analysis

A survey was created for the purpose of soliciting ratings of endorsement from the larger practitioner population. Survey results are used to validate the appropriateness of the knowledge areas and tasks developed by the panelists and to inform content weighting decisions. The survey was developed with the following components:

- Description of the purpose of the survey
- Definition of the target population identified by the specialty practice area
- Respondent ratings of endorsement for the task statements
- Respondent ratings of endorsement for the knowledge areas
- Demographic questions that assess survey respondents' professional qualifications
- Open field for any additional comments

The ratings of endorsement from the survey respondents were solicited using two scales: Importance and Frequency. Each scale consists of a prompt for task statement, prompt for knowledge areas, and numerical responses with an associated text anchor (description).

Importance	How important is this task to pain management pharmacy practice? How important is this knowledge area to pain management pharmacy practice?
0	not at all / not applicable
1	of very little importance
2	somewhat important
3	moderately important
4	very important
5	critically important
Frequency	How frequently is this task performed in pain management pharmacy practice? How frequently is this knowledge used in pain management pharmacy practice?
0	not at all / not applicable
1	very rarely
2	rarely
3	occasionally
4	often
5	very often

The survey was pilot tested with a sample that consisted of the job analysis panelists, the specialty examination council, and BPS staff persons. The pilot test was conducted during the dates of 12-20 February 2024. Pilot testers did not identify any necessary changes. See Appendix C for a copy of the final survey text.

The survey was open and available from 21 February to 18 March 2024. All pharmacists who hold the BCACP, BCGP, BCOP, BCPP, BCPS, or BCPPS credential were directly invited via email to complete the online survey. The survey was also disseminated through the following affiliate organizations: Society of Pain and Palliative Care Pharmacists (SPPCP), American Society of Health-System Pharmacists (ASHP), and American College of Clinical Pharmacy (ACCP).

The survey yielded 170 usable responses. Responses were not used if the survey was not completed or if the respondent indicated spending less than 50% of their pharmacy practice in pain management pharmacy.

Responses to Demographic Questions		
Percentage of Time in Pain Management	Mean = 83.11 | SD = 19.08	***n***
0 – 50		1
51 – 75		28
76 – 99		37
100		77
Post-Graduate Pharmacy Residency Programs		***n***
PGY1 Pharmacy		113
PGY1 Managed Care Pharmacy		0
PGY1 Community-Based Pharmacy		5
PGY2 Ambulatory Care Pharmacy		4
PGY2 Cardiology Pharmacy		0
PGY2 Clinical Pharmacogenomics		1
PGY2 Community-Based Pharmacy Administration and Leadership		0
PGY2 Corporate Pharmacy Administration and Leadership		0
PGY2 Critical Care Pharmacy		1
PGY2 Emergency Medicine Pharmacy		0
PGY2 Geriatric Pharmacy		0
PGY2 Health System Pharmacy Administration and Leadership		2
PGY2 Infectious Diseases Pharmacy		1
PGY2 Internal Medicine Pharmacy		2
PGY2 Investigational Drugs and Research		0
PGY2 Medication Use Safety and Policy		0
PGY2 Neurology		0
PGY2 Oncology Pharmacy		3
PGY2 Pain Management and Palliative Care Pharmacy		54
PGY2 Pediatric Pharmacy		1
PGY2 Pharmacotherapy		5
PGY2 Pharmacy Informatics		1
PGY2 Population Health Management and Data Analytics Pharmacy		0
PGY2 Psychiatric Pharmacy		11

PGY2 Solid Organ Transplant Pharmacy		0	
PGY2 Specialty Pharmacy Administration and Leadership		0	
Other		8	
BPS Certifications		***n***	
BCACP - Ambulatory Care		9	
BCCCP - Critical Care		2	
BCCP - Cardiology		0	
BCEMP - Emergency Medicine		0	
BCGP - Geriatric		15	
BCIDP - Infectious Diseases		1	
BCNP - Nuclear		0	
BCNSP - Nutrition Support		0	
BCOP - Oncology		5	
BCPP - Psychiatric		14	
BCPPS - Pediatric		1	
BCPS - Pharmacotherapy		97	
BCSCP - Compounded Sterile Preparations		0	
BCTXP - Solid Organ Transplantation		0	
Years of Experience as a Licensed Pharmacist	Mean = 13.72 | SD = 9.97	***n***	**%**
0-5		40	23.53%
6-10		40	23.53%
11-15		30	17.65%
16-20		26	15.29%
20+		34	20.00%
Primary Practice Setting		***n***	**%**
Academic Institution / Educational Institution		15	8.82%
Academic Medical Center or Hospital		42	24.71%
Children's Hospital		0	0.00%
Community Hospital		20	11.76%
Community Pharmacy		5	2.94%
Home Infusion / Ambulatory Infusion		0	0.00%
Hospice		7	4.12%
Hybrid Academic-Community Hospital		4	2.35%
Integrated Health System / Accountable Care Organization		0	0.00%
Investigational Drug Service		0	0.00%
Long-Term Care Pharmacy		0	0.00%
Managed Care		1	0.59%
Outpatient Clinic / Ambulatory Clinic		16	9.41%
Pharmaceutical Industry		1	0.59%
Specialty Pharmacy		0	0.00%
Governmental Healthcare Facility / Veterans Affairs Hospital		57	33.53%

Other	2	1.18%
Location of Primary Practice	***n***	**%**
United States	**153**	**90.0%**
AL	4	2.4%
AR	2	1.2%
AZ	1	0.6%
CA	14	8.2%
CO	1	0.6%
CT	1	0.6%
DC	1	0.6%
FL	11	6.5%
GA	3	1.8%
IA	2	1.2%
IL	4	2.4%
IN	6	3.5%
KS	1	0.6%
KY	5	2.9%
MA	7	4.1%
MD	9	5.3%
MI	3	1.8%
MN	3	1.8%
MO	5	2.9%
MT	1	0.6%
NC	5	2.9%
ND	1	0.6%
NH	1	0.6%
NJ	1	0.6%
NV	1	0.6%
NY	7	4.1%
OH	9	5.3%
OK	3	1.8%
OR	1	0.6%
PA	13	7.7%
PR	1	0.6%
SC	1	0.6%
TN	6	3.5%
TX	3	1.8%
UT	1	0.6%
WA	7	4.1%
WI	5	2.9%
WV	1	0.6%

Unspecified Location in USA	2	1.2%
Outside of the United States	**16**	**9.4%**
Australia	2	1.2%
Canada	1	0.6%
Egypt	6	3.5%
Jordan	2	1.2%
Libya	1	0.6%
Oman	1	0.6%
Palestine	1	0.6%
Saudi Arabia	2	1.2%
Time Spent in Professional Role	***n*** **(>50%)**	**Average %**
Direct Patient Care: Acute Pain	6	11.95%
Direct Patient Care: Chronic Pain	45	31.59%
Direct Patient Care: Substance Use Disorder / Mental Health	2	7.62%
Direct Patient Care: Palliative and End-of-Life Care	19	15.78%
Administration / Management / Pain Stewardship	22	18.32%
Teaching / Precepting	0	9.36%
Research / Scholarship	0	3.62%
Which form(s) of prescriptive authority do you have in your current role?	***n***	
Patient-Specific Dependent Prescription Authority (e.g., hospital protocol)	44	
Population-Based Dependent Prescription Authority (e.g., Collaborative Practice Agreement)	47	
Independent Prescription Authority according to Governmental Protocol (e.g., State-Based Protocols)	20	
Independent Prescription Authority according to Standard of Care (e.g., Independent Prescribing)	35	
Active Individual Registration with the United States Drug Enforcement Agency (DEA)	32	

	Mean Ratings for Task Statements	Importance	Frequency
1	Evaluate patient medical history, treatment history, present illness, clinical status, social determinants of health, and other relevant patient characteristics	4.68	4.69
2	Establish treatment goals in collaboration with the patient, caregivers, and/or interprofessional healthcare team	4.66	4.66
3	Develop person-centered plans of care in alignment with evidence-based medicine, practice guidelines, and treatment goals	4.68	4.66
4	Optimize treatment selection and adherence based on patient characteristics and treatment characteristics	4.59	4.59
5	Monitor and evaluate response to plans of care and progress toward treatment goals	4.56	4.58
6	Modify plans of care in response to clinical status, treatment goals, and other relevant patient factors	4.46	4.49
7	Utilize clinical decision support and other health information technology to optimize treatment decisions	3.61	3.72
8	Develop and/or provide healthcare education and counseling to patients, caregivers, and/or members of the general public	4.18	4.00
9	Develop and/or provide healthcare education and support to pharmacists, learners, and other members of the interprofessional healthcare team	4.08	3.86
10	Participate in healthcare quality improvement, safety, and/or public health initiatives	3.57	3.29
11	Evaluate, establish, and/or align policies and practices according to accreditation standards, regulatory requirements, and evidence-based practice	3.93	3.59
12	Develop healthcare protocols, clinical decision support, medication formularies, and pain pharmacy services	3.86	3.49
13	Develop, lead, and/or participate in pain stewardship (e.g., opioid stewardship) programs	4.03	3.72
14	Engage in professional development in pain management practice, such as professional advocacy, committee involvement, scholarly activities, and continuing education	3.59	3.42
15	Evaluate research literature and other published information to determine the quality and applicability to pain and symptom management practice	3.81	3.50

Mean Ratings for Knowledge Statements		IMPO	FREQ
1	**Pain Management**		
1A	Principles of Pain		
1A1	Etiology and Pathophysiology of Pain	4.08	4.09
1A2	Pain Classification (e.g., neuropathic, nociceptive, nociplastic, acute, chronic)	4.55	4.61
1A3	Conditions Commonly Associated with Pain	4.18	4.31
1B	Pain Experience		
1B1	Presentation of Pain Symptoms	4.32	4.47
1B2	Patient Experiences Related to Pain (e.g., stigma, bias, biopsychosocial model)	4.18	4.11
1B3	Pain and Symptom Assessment Tools (e.g., FACES, Edmonton scale, FLACC, PEG, PROMIS-6B)	3.88	4.12
2	**Therapeutics and Patient Management**		
2A	Patient Assessment		
2A1	Clinical Assessment and Screening	4.24	4.30
2A2	Patient Communication and Engagement Techniques (e.g., MI, NURSE, SPIKES, REMAP, difficult conversations)	3.73	3.66
2A3	Laboratory and Diagnostic Testing	3.71	3.76
2A4	Pharmacodynamics, Pharmacokinetics, and Pharmacogenomics	3.87	3.78
2A5	Social Determinants of Health	3.71	3.62
2A6	Risk Assessment (e.g., ORT, SOAP, DIRE, RIOSORD, CRAFFT)	3.85	3.84
2B	Therapeutic Implementation		
2B1	Comprehensive Person-Centered Care Planning (e.g., goals of care, shared decision-making)	4.34	4.26
2B2	Types of Care (e.g., acute pain, chronic pain, substance use disorder, palliative and end-of-life)	4.41	4.41
2B3	Opioid Pharmacologic Treatments	4.66	4.64
2B4	Non-Opioid Pharmacologic Treatments	4.70	4.75
2B5	Medication Delivery (e.g., routes of administration, delivery devices, anatomic alterations, intrathecal pumps)	3.93	3.84
2B6	Non-Pharmacologic Treatments and Lifestyle Modification (e.g., CBT, acupuncture, acceptance therapy)	4.01	3.86
2B7	Patient and Caregiver Education and Counseling	4.38	4.25
2B8	Interprofessional Care Coordination	4.31	4.24
2C	Therapeutic Outcomes and Monitoring		
2C1	Therapeutic Targets	3.95	3.91
2C2	Therapeutic and Physiological Monitoring	4.05	4.02
2C3	Risk Mitigation (e.g., PDMP, pill counting, controlled substance agreements, storage and disposal, toxicology, suicide prevention)	4.45	4.34
2C4	Adverse Drug Events and Drug Interactions	4.44	4.38
2C5	Medication Adherence (e.g., addressing barriers, measurement tools)	4.09	4.09
2C6	Medication Reconciliation	4.15	4.25
2C7	Continuity of Care (e.g., referrals, transitions of care, case management)	3.85	3.74

3	**Professional Practice**		
3A	Quality of Care		
3A1	Clinical Practice Guidelines	4.22	4.18
3A2	Public and Population Health	3.44	3.38
3A3	Ethics and Patient Advocacy	3.84	3.59
3A4	Drug Information Resources and Databases	4.09	4.05
3A5	Pain Stewardship (e.g., opioid stewardship, resource utilization, clinical outcomes, safety)	4.23	4.04
3B	Practice Management		
3B1	Professional Practice Standards and Regulations	3.82	3.66
3B2	Collaborative Practice Agreements and Independent Prescribing	3.74	3.55
3B3	Research Methods and Statistics	2.88	2.74
3B4	Quality Management and Process Improvement	3.43	3.28
3B5	Clinical Informatics (e.g., clinical decision support, alerts, workflows)	3.20	3.15
3B6	Pharmacoeconomics (e.g., formulary management, cost effectiveness, reimbursement and billing)	3.21	3.14

An exploratory factor analysis[7] using maximum likelihood extraction and varimax rotation[8] was performed on the importance ratings provided for the knowledge areas. One factor emerged, with an eigenvalue of 10.70, as the primary factor explaining 28.15% of the variability in importance ratings. All subsequent factors had eigenvalues of 2.79 or less and each explained less than 7.35% of the variability in importance ratings. This provides additional evidence for the consistency of the knowledge areas developed and their applicability to the intended measurement construct.

[7] Thompson, B. (2004). Exploratory and confirmatory factor analysis: Understanding concepts and applications. American Psychological Association: Washington DC.

[8] Kaiser, H. (1958). The varimax criterion for analytic rotation in factor analysis. Psychometrika, 23(3).

3. Finalization of Exam Content Outline

The job analysis panel reconvened on 4 April 2024 via teleconference to review the results of the survey and to finalize the exam content outline.

The panelists reviewed the results of the survey demographic questions and deemed the respondent sample to be representative of the target population, which are pharmacists specializing in pain management pharmacy.

The panelists agreed to retain all the task statements developed, without edits.

The panelists agreed to retain all the knowledge statements developed but made two edits. 2B6 was edited so that it more clearly delineates inclusion of complementary and inclusive therapies and removes the examples in parentheses, such that it now reads: Non-Pharmacologic Treatments, Complementary, and Integrative Therapies. 3B3, which was the only knowledge statement with mean ratings below 3.0, was edited so that it is less focused on the technical component of research methods and statistics and instead more reflective of how pharmacists evaluate research literature, such that it now reads: Literature Evaluation (e.g., research process, statistics, applicability).

Lastly, the panelists were tasked with determining the content weighting, the proportion of examination content to be distributed to each content domain and sub-domain. The sum of the mean criticality ratings for the knowledge areas in each domain was tabulated and compared against the sum of the mean criticality ratings for all knowledge areas.

Examination Content Domains and Subdomains		
1	**Pain Management**	**18%**
1A	Principles of Pain	9%
1B	Pain Experience	9%
2	**Therapeutics and Patient Management**	**59%**
2A	Patient Assessment	15%
2B	Therapeutic Implementation	24%
2C	Therapeutic Outcomes and Monitoring	20%
3	**Professional Practice**	**23%**
3A	Quality of Care	12%
3C	Practice Management	11%

See Appendix D for the final Examination Content Outline.

Appendix A – Subject Matter Experts

Job Analysis Committee

Name	Credentials	Post-Licensure Experience	Job Title	Employer/ Affiliation	Location
Amanda Mullins	PharmD, BCPS	7 Years	Facility PMOP Coordinator	Marion IL VA Medical Center	IL
Ashley Reid	PharmD, BCPPS	10 Years	Clinical Pharmacist Specialist	Children's Hospital Colorado	CO
Benjamin Kematick	PharmD, BCACP	7 Years	Clinical Pharmacy Specialist- Palliative Care	Dana- Farber Cancer Institute	MA
Christina Larin Creech	PharmD, BCGP	15 Years	Clinical Pharmacy Practitioner - Pain management/RPD PGY2 Pain/Palliative Care Residency	Tennessee Valley VA	TN
Courtney Kominek	PharmD, BCPS	11 Years	Clinical Pharmacist Practitioner - Pain Management	Harry S. Truman Memorial Veterans' Hospital	MO
Craig Yon	PharmD, BCACP, PhC	4 Years	Pharmacist Clinician	University of New Mexico Hospitals	NM
Cynthia Barlow	PharmD, BCOP, BCPS	25 Years	Clinical Pharmacy Hematology/Oncology Pain and Palliative Care Specialist	ChristianaCare	DE
Donald Francesco D'Aquila	PharmD, MBA, BCGP, RRT	10 Years	Clinical Pharmacy Specialist - Pain and Palliative Care	University of Maryland	MD
Eva Elisabeth Coulson	PharmD, BCPS	5 Years	Pain Management and Oncology Pharmacist	Kaweah Health	CA
Jacqueline Cleary	PharmD, BCACP	9 Years	Associate Professor of Pharmacy Practice	Albany College of Pharmacy and Health Sciences	NY

Jeffrey Boyer	PharmD, BCACP, BCPP, BCPS	18 Years	Pain Management, Opioid Safety and PDMP facility program coordinator	Southern Arizona VA Healthcare System	AZ
Jessica Geiger	PharmD, BCPS	12 Years	PMOP Coordinator	VA Illiana Health System	OH
Julie Melissa Waldfogel	PharmD, BCGP	14 Years	Clinical Pharmacy Specialist	The Johns Hopkins Hospital	MD
Katherine L. Koller	PharmD, BCPP	10 Years	PMOP Coordinator	VA Finger Lakes HCS	MI
Kelly Mendoza	PharmD, BCPS	8 Years	Clinical Pharmacy Specialist Lead	PeaceHealth St. John Medical Center	WA
Lara Duncan Riche	PharmD, BCGP	5 Years	Facility PMOP Coordinator	Alexandria VA Medical Center	LA
Lauren Koranteng	PharmD, BCPS	12 Years	Clinical Pharmacy Specialist	Memorial Sloan Kettering Cancer Center	NY
Lindsay Wells	PharmD, BCPS	11 Years	Facility PMOP Coordinator	Lexington VA HCS	KY
Mark Garofoli	PharmD, MBA, BCGP, CPE, CTTS	19 Years	Clinical Assistant Professor & Clinical Pain/SUD Pharmacist	WVU School of Pharmacy	WV
Michele Matthews	PharmD, BCACP, FASHP	21 Years	Professor of Pharmacy Practice; Advanced Practice Pharmacist - Pain Management	Massachusetts College of Pharmacy and Health Sciences	MA
Rabia Atayee	PharmD, BCPS, APh, FAAHPM	20 Years	Professor of Clinical Pharmacy, Palliative Care Specialist	University of California, Skaggs School of Pharmacy and Pharmaceutical Sciences	CA
Sandra DiScala	PharmD, BCPS	16 Years	Clinical Pharmacist Practitioner	West Palm Beach VAHCS	FL

Tanya Janine Uritsky	PharmD, BCPP	15 Years	Opioid Stewardship Coordinator	Hospital of the University of Pennsylvania	PA
Thomas B. Gregory	PharmD, BCPS, FASPE	19 Years	Pharmacist	CoxHealth	MO
Vinh Dao	PharmD, BCPS	17 Years	VISN 23 Telepain Program Manager (Regional)	Veterans Health Administration	MN
William J. Peppard	PharmD, BCPS, FCCM	20 Years	Enterprise Pain Stewardship Coordinator	Froedtert & the Medical College of Wisconsin	WI

Job Analysis Interviewees

Name	Credentials	Post-Licensure Experience	Job Title	Employer/ Affiliation	Location
Christopher Paul Alderman	B Pharm, B Psychol, Dip Couns, PhD, BCGP, BCPP, FASCP, FANZCAP	38 Years	Consultant, Australian Medication Safety Services	Australian Medication Safety Services	Australia
Cori Dolan	PharmD, BCPS	7 Years	Clinical Pain Management Pharmacist	University of Washington	WA
Daniel Arendt	PharmD, BCPS	5 Years	Assistant Professor / Pain Management and Opioid Stewardship Clinical Pharmacy Specialist	The University of Cincinnati	OH
Joseph Kanaan	PharmD, BCPS, RPh, APh	5 Years	Ambulatory Care Pharmacist - Pain Management	Kaiser Permanente	CA
Samuel Parmiter	BSc Pharm, PharmD, ACPR, APA	8 Years	Clinical Pharmacist	Alberta Health Services	Canada

Appendix B – Orientation Presentation

Job Analysis

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Job Analysis

A job analysis is often called a role delineation study or practice analysis in healthcare certification settings

The key points of inquiry in a Job Analysis are:

- ✓ **Definition of Target Population**
- ✓ **Tasks Performed**
- ✓ **Competencies Required**

The outcome is an exam content outline, which is used for creation of exams that reflect current practice and to identify to other stakeholders the scope of the exam

bps

Multi-Method Approach

Both quantitative and qualitative methods are used in an RDS, which helps bolster the defensibility of the process and outcomes

Qualitative
- Interviews with Practitioners
- Focus Group with Practitioners

Quantitative
- Survey Administration and Analysis

Here is what the process looks like in sequence

bps

Multiple Levels of Analysis

Consider how you would describe a job role to someone

All three levels help define the scope

But only the outer layer is the level at which an examinee is assessed

bps

Exam Content Outline

An ECO is a grouping of examination content areas in a hierarchical list

Exam Content Outline Structure and Components		(Somewhat Silly) Example
1	Content Domain	Chocolate
1A	Content Subdomain	History
1A1	Knowledge Area	Mesoamerican Usage
1A2	Knowledge Area	European Adaptation
1A3	Knowledge Area	Modern Production
1B	Content Subdomain	Types
1B1	Knowledge Area	Milk Chocolate
1B2	Knowledge Area	Dark Chocolate
1B3	Knowledge Area	White Chocolate

Domains:

The Major Aspects of Practice Area

Meaningful Divisions within the Domain

The Knowledge Assessed by Exam Items

Each of these should be written such that they can be preceded by the phrase "Knowledge of"

bps

Context Is Key

In addition to creation of an ECO, we will develop an inventory of task statements.

- These tasks identify the objectives and responsibilities of the role.
- These tasks provide the context in which the knowledge is applied.
- Tasks need not be grouped into content domains.
- Tasks will not be used to classify exam items nor determine what is tested.

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Linkage Analysis

A linkage matrix looks something like this

	1	2	3	4	5	6	7	8	9
1A1						x		x	
1A2					x				
1A3				x					x
1B1			x	x					
1B2			x				x		
1C1	x	x							
1C2		x					x		x

Purpose of the Linkage Matrix

- demonstrate which knowledge areas are required for each task
- demonstrate that the knowledge areas are indeed practice-based
- help identify gaps in either inventory
- help identify tasks or knowledge that are superfluous or out-of-scope

Helpful Hints

- An x-mark means that the specific knowledge is needed to perform that specific task.
- For example, knowledge of different types of chocolate is needed to *Develop Chocolate Recipes* but history of chocolate is not needed for that same task.

bps

Confidentiality

Although the outcomes of the Job Analysis will eventually be summarized in a public-facing document, please do not disclose information about our deliberations or work in progress

Any information other than that provided by BPS can give an unfair advantage or disadvantage to examinees, thereby threatening the validity of the exam

When asked about your involvement, simply direct prospective examinees and other stakeholders to official channels (BPS website) for information about the certification program

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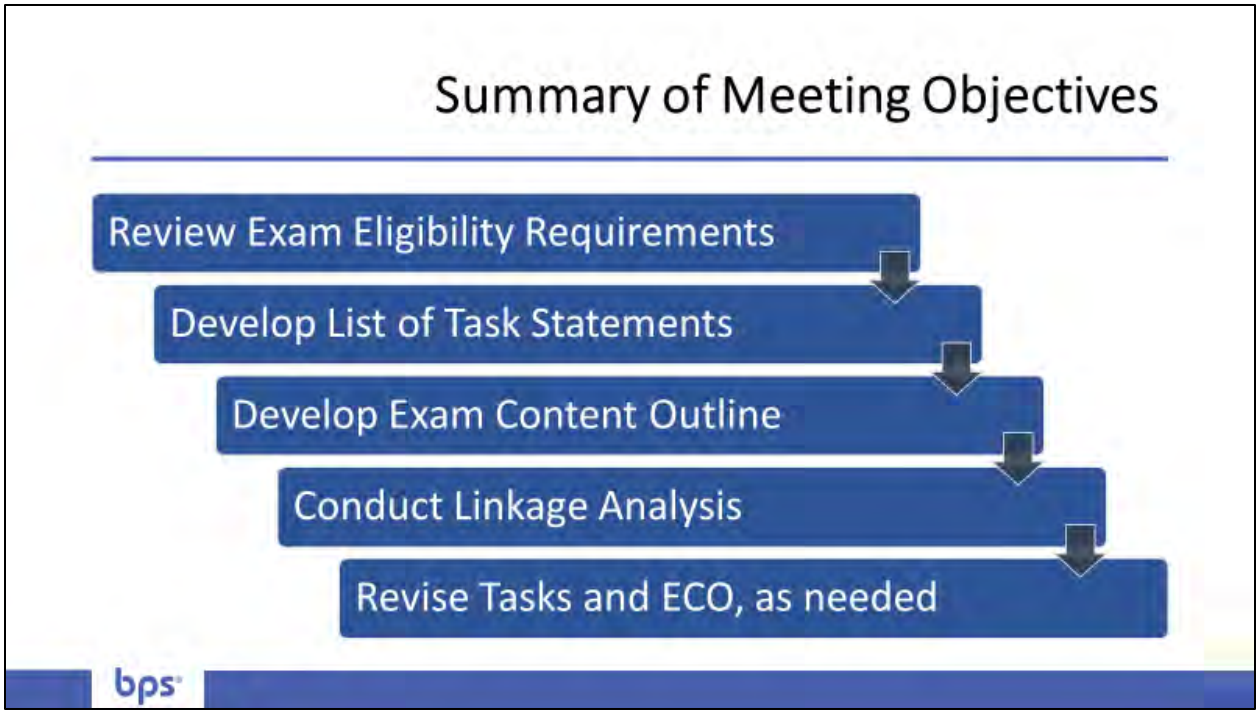

Appendix C – Survey Text

BPS 2024 Pain Management Pharmacy Job Analysis Survey

Survey Introduction

The Board of Pharmacy Specialties (BPS) is conducting a Job Analysis for the Board-Certified Pain Management Pharmacist certification program to develop an updated examination content outline, which serves as a blueprint for the certification exam and the scope for recertification and eligibility purposes.

As part of this Job Analysis, we request your participation in this survey to provide ratings and feedback for the tasks and knowledge areas identified as representing current pharmacy practice in Pain Management pharmacy.

Survey respondents will be prompted to rate each task and knowledge area on its importance to Pain Management pharmacy practice and its frequency of use.

Additionally, respondents will be asked a few demographic questions to better understand the respondent sample's professional qualifications - but no personally identifiable information will be solicited.

Responses will only be reviewed in aggregate and will not be used for any other purpose than the Job Analysis.

Your participation is expected to take 15 to 30 minutes in total.

Those who complete the survey are eligible for entry into a raffle for one of ten $25 Amazon gift cards.

If you have any questions about this survey, please feel free to contact ja@aphanet.org.

Are you willing to participate in this survey and provide your responses to BPS?

◯ Yes

◯ No

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BPS 2024 Pain Management Pharmacy Job Analysis Survey

Task Statements

Please rate each task statement according to its importance to pain management pharmacy practice and the frequency of its performance in pain management pharmacy practice.

	Importance	Frequency
Evaluate patient medical history, treatment history, present illness, clinical status, social determinants of health, and other relevant patient characteristics		
Establish treatment goals in collaboration with the patient, caregivers, and/or interprofessional healthcare team		
Develop person-centered plans of care in alignment with evidence-based medicine, practice guidelines, and treatment goals		
Optimize treatment selection and adherence based on patient characteristics and treatment characteristics		
Monitor and evaluate response to plans		

of care and progress toward treatment goals		
Modify plans of care in response to clinical status, treatment goals, and other relevant patient factors		
Utilize clinical decision support and other health information technology to optimize treatment decisions		
Develop and/or provide healthcare education and counseling to patients, caregivers, and/or members of the general public		
Develop and/or provide healthcare education and support to pharmacists, learners, and other members of the interprofessional healthcare team		
Participate in healthcare quality improvement, safety, and/or public health initiatives		
Evaluate, establish, and/or align policies and practices according to accreditation standards, regulatory requirements, and evidence-based practice		
Develop healthcare protocols, clinical		

decision support, medication formularies, and pain pharmacy services		
Develop, lead, and/or participate in pain stewardship (e.g., opioid stewardship) programs		
Engage in professional development in pain management practice, such as professional advocacy, committee involvement, scholarly activities, and continuing education		
Evaluate research literature and other published information to determine the quality and applicability to pain and symptom management practice		

What task associated with pain management pharmacy is missing from this list, if any?

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BPS 2024 Pain Management Pharmacy Job Analysis Survey

Knowledge Areas

Please rate each knowledge area in the Pain Management content domain according to its importance to pain management pharmacy practice and the frequency of its use in pain management pharmacy practice.

	Importance	Frequency
Etiology and Pathophysiology of Pain		
Pain Classification (e.g., neuropathic, nociceptive, nociplastic, acute, chronic)		
Conditions Commonly Associated with Pain		
Presentation of Pain Symptoms		
Patient Experiences Related to Pain (e.g., stigma, bias, biopsychosocial model)		
Pain and Symptom Assessment Tools (e.g., FACES, Edmonton scale, FLACC, PEG, PROMIS-6B)		

Please rate each knowledge area in the Therapeutics and Patient Management content domain according to its importance to pain management pharmacy practice and the frequency of its use in

pain management pharmacy practice.

	Importance	Frequency
Clinical Assessment and Screening		
Patient Communication and Engagement Techniques (e.g., MI, NURSE, SPIKES, REMAP, difficult conversations)		
Laboratory and Diagnostic Testing		
Pharmacodynamics, Pharmacokinetics, and Pharmacogenomics		
Social Determinants of Health		
Risk Assessment (e.g., ORT, SOAP, DIRE, RIOSORD, CRAFFT)		
Comprehensive Person-Centered Care Planning (e.g., goals of care, shared decision-making)		
Types of Care (e.g., acute pain, chronic pain, substance use disorder, palliative and end-of-life)		
Opioid Pharmacologic Treatments		
Non-Opioid Pharmacologic Treatments		
Medication Delivery (e.g., routes of administration, delivery devices, anatomic alterations, intrathecal pumps)		
Non-Pharmacologic Treatments and Lifestyle Modification (e.g., CBT, accupuncture, acceptance therapy)		

Patient and Caregiver Education and Counseling		
Interprofessional Care Coordination		
Therapeutic Targets		
Therapeutic and Physiological Monitoring		
Risk Mitigation (e.g., PDMP, pill counting, controlled substance agreements, storage and disposal, toxicology, suicide prevention)		
Adverse Drug Events and Drug Interactions		
Medication Adherence (e.g., addressing barriers, measurement tools)		
Medication Reconciliation		
Continuity of Care (e.g., referrals, transitions of care, case management)		

Please rate each knowledge area in the Professional Practice content domain according to its importance to pain management pharmacy practice and the frequency of its use in pain management pharmacy practice.

	Importance	Frequency
Clinical Practice Guidelines		
Public and Population Health		
Ethics and Patient Advocacy		
Drug Information Resources and Databases		
Pain Stewardship (e.g., opioid stewardship, resource utilization, clinical outcomes, safety)		
Professional Practice Standards and Regulations		
Collaborative Practice Agreements and Independent Prescribing		
Research Methods and Statistics		
Quality Management and Process Improvement		
Clinical Informatics (e.g., clinical decision support, alerts, workflows)		
Pharmacoeconomics (e.g., formulary management, cost effectiveness, reimbursement and billing)		

What knowledge area associated with pain management pharmacy is missing from this list, if any?

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BPS 2024 Pain Management Pharmacy Job Analysis Survey

Survey Respondent Demographics

What percentage of your professional practice is spent in pain management pharmacy?

Which post-graduate pharmacy residency programs have you completed? Select all that apply and leave blank if none.

- [ ] PGY1 Pharmacy
- [ ] PGY1 Managed Care Pharmacy
- [ ] PGY1 Community-Based Pharmacy
- [ ] PGY2 Ambulatory Care Pharmacy
- [ ] PGY2 Cardiology Pharmacy
- [ ] PGY2 Clinical Pharmacogenomics
- [ ] PGY2 Community-Based Pharmacy Administration and Leadership
- [ ] PGY2 Corporate Pharmacy Administration and Leadership
- [ ] PGY2 Critical Care Pharmacy
- [ ] PGY2 Emergency Medicine Pharmacy
- [ ] PGY2 Geriatric Pharmacy
- [ ] PGY2 Health System Pharmacy Administration and Leadership
- [ ] PGY2 Infectious Diseases Pharmacy
- [ ] PGY2 Internal Medicine Pharmacy

- [ ] PGY2 Investigational Drugs and Research
- [ ] PGY2 Medication Use Safety and Policy
- [ ] PGY2 Neurology
- [ ] PGY2 Oncology Pharmacy
- [ ] PGY2 Pain Management and Palliative Care
- [ ] PGY2 Pediatric Pharmacy
- [ ] PGY2 Pharmacotherapy
- [ ] PGY2 Pharmacy Informatics
- [ ] PGY2 Population Health Management and Data Analytics Pharmacy
- [ ] PGY2 Psychiatric Pharmacy
- [ ] PGY2 Solid Organ Transplant Pharmacy
- [ ] PGY2 Specialty Pharmacy Administration and Leadership
- [ ] Other: please specify

Which BPS certifications do you currently hold? Select all that apply and leave blank if none.

- [ ] BCACP - Ambulatory Care
- [ ] BCCCP - Critical Care
- [ ] BCCP - Cardiology
- [ ] BCEMP - Emergency Medicine
- [ ] BCGP - Geriatric
- [ ] BCIDP - Infectious Diseases
- [ ] BCNP - Nuclear
- [ ] BCNSP- Nutrition Support
- [ ] BCOP - Oncology
- [ ] BCPP - Psychiatric
- [ ] BCPPS - Pediatric
- [ ] BCPS - Pharmacotherapy
- [ ] BCSCP - Compounded Sterile Preparations
- [ ] BCTXP - Solid Organ Transplantation

How many years of experience do you have as a pharmacist?

What is your primary practice setting?

- ◯ Academic Institution / Educational Institution
- ◯ Academic Medical Center or Hospital
- ◯ Children's Hospital
- ◯ Community Hospital
- ◯ Community Pharmacy
- ◯ Home Infusion / Ambulatory Infusion
- ◯ Hospice
- ◯ Hybrid Academic-Community Hospital
- ◯ Integrated Health System / Accountable Care Organization
- ◯ Investigational Drug Service
- ◯ Long-Term Care Pharmacy
- ◯ Managed Care
- ◯ Outpatient Clinic / Ambulatory Clinic
- ◯ Pharmaceutical Industry
- ◯ Specialty Pharmacy
- ◯ Governmental Healthcare Facility / Veterans Affairs Hospital
- ◯ Other (please specify)

Where is your primary practice located?

State or Territory (if in United States) -- select state --

Nation/Country

What percentage of your time do you spend in each area?

Direct Patient Care: Acute Pain	
Direct Patient Care: Chronic Pain	
Direct Patient Care: Substance Use Disorder / Mental Health	
Direct Patient Care: Palliative and End-of-Life Care	
Administration / Management / Pain Stewardship	
Teaching / Precepting	
Research / Scholarship	

Which form(s) of prescriptive authority do you have in your current role? Select all that apply and leave blank if none.

- ☐ Patient-Specific Dependent Prescription Authority (e.g., hospital protocol)
- ☐ Population-Based Dependent Prescription Authority (e.g., Collaborative Practice Agreement)
- ☐ Independent Prescription Authority according to Governmental Protocol (e.g., State-Based Protocols)
- ☐ Independent Prescription Authority according to Standard of Care (e.g., Independent Prescribing)
- ☐ Active Individual Registration with the United States Drug Enforcement Agency (DEA)

BPS 2024 Pain Management Pharmacy Job Analysis Survey

Thank You

Please provide any feedback or comments about the survey here.

Those who complete the survey are eligible for entry into a raffle for one of ten $25 Amazon gift cards. If you would like to be entered into the raffle, please enter your email address below. Your email address will be used for the sole purpose of sending your gift card if you win.

Thank you very much for your interest and participation!

Appendix D – Exam Content Outline

1	**Pain Management**	**18%**
1A	Principles of Pain	9%
1A1	Etiology and Pathophysiology of Pain	
1A2	Pain Classification (e.g., neuropathic, nociceptive, nociplastic, acute, chronic)	
1A3	Conditions Commonly Associated with Pain	
1B	Pain Experience	9%
1B1	Presentation of Pain Symptoms	
1B2	Patient Experiences Related to Pain (e.g., stigma, bias, biopsychosocial model)	
1B3	Pain and Symptom Assessment Tools (e.g., FACES, Edmonton scale, FLACC, PEG, PROMIS-6B)	
2	**Therapeutics and Patient Management**	**59%**
2A	Patient Assessment	15%
2A1	Clinical Assessment and Screening	
2A2	Patient Communication and Engagement Techniques (e.g., MI, NURSE, SPIKES, REMAP, difficult conversations)	
2A3	Laboratory and Diagnostic Testing	
2A4	Pharmacodynamics, Pharmacokinetics, and Pharmacogenomics	
2A5	Social Determinants of Health	
2A6	Risk Assessment (e.g., ORT, SOAP, DIRE, RIOSORD, CRAFFT)	
2B	Therapeutic Implementation	24%
2B1	Comprehensive Person-Centered Care Planning (e.g., goals of care, shared decision-making)	
2B2	Types of Care (e.g., acute pain, chronic pain, substance use disorder, palliative and end-of-life)	
2B3	Opioid Pharmacologic Treatments	
2B4	Non-Opioid Pharmacologic Treatments	
2B5	Medication Delivery (e.g., routes of administration, delivery devices, anatomic alterations, intrathecal pumps)	
2B6	Non-Pharmacologic, Complementary, and Integrative Therapies	
2B7	Patient and Caregiver Education and Counseling	
2B8	Interprofessional Care Coordination	
2C	Therapeutic Outcomes and Monitoring	20%
2C1	Therapeutic Targets	
2C2	Therapeutic and Physiological Monitoring	
2C3	Risk Mitigation (e.g., PDMP, pill counting, controlled substance agreements, storage and disposal, toxicology, suicide prevention)	
2C4	Adverse Drug Events and Drug Interactions	
2C5	Medication Adherence (e.g., addressing barriers, measurement tools)	
2C6	Medication Reconciliation	
2C7	Continuity of Care (e.g., referrals, transitions of care, case management)	

3	Professional Practice	23%
3A	Quality of Care	12%
3A1	Clinical Practice Guidelines	
3A2	Public and Population Health	
3A3	Ethics and Patient Advocacy	
3A4	Drug Information Resources and Databases	
3A5	Pain Stewardship (e.g., opioid stewardship, resource utilization, clinical outcomes, safety)	
3B	Practice Management	11%
3B1	Professional Practice Standards and Regulations	
3B2	Collaborative Practice Agreements and Independent Prescribing	
3B3	Literature Evaluation (e.g., research process, statistics, applicability)	
3B4	Quality Management and Process Improvement	
3B5	Clinical Informatics (e.g., clinical decision support, alerts, workflows)	
3B6	Pharmacoeconomics (e.g., formulary management, cost effectiveness, reimbursement and billing)	