Examination Specifications
Pharmacy Informatics
Board of Pharmacy Specialties

Name of Credential	**[To Be Determined]**
Certification-Issuing Body	Board of Pharmacy Specialties
Designation Awarded	**[To Be Determined]**
Level of Proficiency	Specialty Certification
Target Population	Pharmacists who specialize in the design, implementation, integration, maintenance, support, and/or optimization of health information technology, systems, and workflows focused on the medication-use process, patient care, and health outcomes
Program Purpose	To validate that the pharmacist has the advanced knowledge, skills, and experience necessary to design, implement, integrate, maintain, support, and optimize health information technology, systems, and workflows to promote safety, efficacy, and efficiency of the medication-use process, patient care, and health outcomes
Examination Length	150 items, which includes 125 scored items and 25 unscored items
Administration Time	3 Hours and 45 Minutes
ECO Creation Date	November 2023

This document serves as examination specifications and certification scheme according to the respective requirements of the NCCA and ISO-IEC 17024 standards. For more information about the BCCCP examination program, please refer to the candidates guide on the BPS website: www.bpsweb.org.

Eligibility Requirements

[To Be Determined]

The rationale for the appropriateness of the requirements for BPS certification programs are based upon the following:

- *BPS recognizes individuals who graduate from a recognized school or college of pharmacy within the candidate's jurisdiction. Those jurisdictions recognize and evaluate programs on the extent to which it accomplishes its stated goals and is consistent with the concept that pharmacy is a unique, personal service profession in the health science field. In the United States, the responsibility for recognizing schools and colleges of pharmacy falls to the Accreditation Council for Pharmacy Education (ACPE).*
- *The rationale for requiring licensure or registration of pharmacists within their jurisdiction is based upon the fact that for public protection, all pharmacists must be licensed or registered. This is considered a baseline requirement to be a pharmacist specialist. In the United States, BPS recognizes the licensure process administered by the National Association of Boards of Pharmacy (NABP). The National Association of Boards of Pharmacy (NABP) aims to ensure the public's health and safety through its pharmacist license transfer and pharmacist competence assessment programs. NABP's member boards of pharmacy are grouped into eight districts that include all 50 United States, the District of Columbia, Guam, Puerto Rico, the Virgin Islands, Bahamas, and all 10 Canadian provinces.*
- *The experiential component is required to help assure practical application of components of the specialty knowledge being certified. There are multiple pathways to meet the practice experience requirement. The faster eligibility pathways recognize accredited residencies through the American Society of Health System Pharmacists (ASHP). The ASHP residency accreditation program identifies and grants public recognition to practice sites having pharmacy residency training programs that have been evaluated and found to meet the qualifications of one of the ASHP's residency accreditations standards. Thus, accreditation of a pharmacy residency program provides a means of assurance to residency applicants that a program meets certain basic requirements and is, therefore, an acceptable site for postgraduate training in pharmacy practice in organized health care.*
- *Passing the BPS pharmacy specialty examination helps assure knowledge consistent with the validated content outline for the BPS specialty.*

The appropriateness of the BPS program requirements are consistent with the Council on Credentialing in Pharmacy's Resource Paper titled: Scope of Contemporary Pharmacy Practice: Roles, Responsibilities, and Functions of Pharmacists and Pharmacy Technicians.

Examination Content Outline

1	**Clinical Workflow**	42%
1A	Software Applications	26%
1A1	Ordering and Prescribing Functions (e.g., CPOE, e-prescribe, real-time prescription benefits, electronic prior authorization)	
1A2	Verification Functions (e.g., auto-verification, dual-verification, product selection, formulary management)	
1A3	Preparation and Compounding Functions (e.g., batch preparation, patient-specific preparation, IV workflow technology, repackaging)	
1A4	Dispensing and Distribution Functions (e.g., equivalency mapping, dispensing hierarchy/logic, medication-fill automation, diversion prevention)	
1A5	Administration Functions (e.g., BCMA, MAR, standardization of routes and frequencies, smart pump library management)	
1A6	Monitoring Functions (e.g., PDMP, adverse event reporting, medication adherence, REMS, registries, immunizations, MTM)	
1A7	Inventory Management Functions (e.g., persistent inventory, procurement, medication tracking, drug shortage and recall management)	
1A8	Documentation and Communication Functions (e.g., documentation templates, clinic notes, messaging, care coordination, patient education, patient-facing EHR)	
1A9	Transitions of Care Functions (e.g., medication reconciliation, external order history, prior authorization)	
1B	Clinical Decision Support	16%
1B1	Five Rights of Clinical Decision Support	
1B2	Active Clinical Decision Support (e.g., FSV, custom alerts, medication warnings, alert fatigue)	
1B3	Passive Clinical Decision Support (e.g., defaults, pathways, order sets, templates, reminders, guidelines, dashboards)	
1B4	Clinical Patient Monitoring (e.g., medication stewardship, acuity/prioritization, pharmacogenomics and precision medicine)	
1B5	Advanced Decision Support (e.g., probability modeling)	
1B6	Medication Safety Best Practices (e.g., ISMP, TJC, CMS, leapfrog)	
2	**Operational Workflow**	39%
2A	Health Information Technology	11%
2A1	Ordering and Verification Technology (e.g., computers, document scanners, security tokens, smartphones)	
2A2	Preparation and Compounding Technology (e.g., compounders, repackagers, robotics, scales, cameras)	
2A3	Dispensing and Distribution Technology (e.g., conveyor belts, pill counters, robotic delivery, kits/trays/carts, tube systems, cabinets, medication tracking)	
2A4	Administration and Monitoring Technology (e.g., smart pumps, barcode scanners, reminders, app-integrated technology, wearable devices, digiceuticals)	
2A5	Inventory Management Technology (e.g., point-of-sale systems, carousels, refrigerators, printers, asset tagging, RFID)	
2B	System Build	14%
2B1	Medication Build and Maintenance (e.g., drug database updates, vendor updates, research protocols, investigational drugs)	

2B2	System Build and Maintenance (e.g., UI/UX, GUI, code upgrades, user support, issue management, downtime procedures)	
2B3	System Implementation and Evaluation (e.g., service and product procurement, vendor management, SDLC)	
2B4	System and Device Integration (e.g., API, external systems)	
2B5	Interoperability Standards (e.g., standardized medication profile, pharmacist eCare plan, HIE)	
2B6	Coding Standards (e.g., NDC, RxNorm, SNOMED CT, LOINC, CPT, ICD10/11, HL7, NCPDP)	
2C	System Operation	14%
2C1	Financial Integration (e.g., 340B, X12, claims, adjudication, drug pricing, revenue integrity, COA vs. COD, cost transparency)	
2C2	Project and Workflow Management (e.g., Gantt, Visio, critical path, PDSA, KPIs, budgeting, resources)	
2C3	Change Management (e.g., training, system adoption, release scheduling, testing methods)	
2C4	Quality Management and Process Improvement (e.g., root cause analysis, troubleshooting, data collection)	
2C5	Governance (e.g., risk management, policies and procedures, business continuity, system security, user access)	
2C6	Legal and Regulatory Requirements (e.g., HIPAA, HITECH act, 21st century cures act, DEA)	
3	**Data and Information Management**	19%
3A	Data Structure	10%
3A1	Data Models (e.g., entity relationship model, relational and non-relational databases, hierarchical model)	
3A2	Logic Concepts (e.g., if, or, xor, and, then, Boolean, case statements)	
3A3	Data Types (e.g., quantitative, qualitative, structured, unstructured, free text, discrete, continuous)	
3A4	Data Governance (e.g., ethics, data integrity, data security, privacy)	
3A5	Referential Compendia (e.g., drug information databases)	
3B	Data Analytics	9%
3B1	Analytics Tools (e.g., MS Excel, R, SQL, Python, ML/AI)	
3B2	Statistical Analysis and Research Methods	
3B3	Data Storage, Preparation, and Cleaning	
3B4	Data Analysis and Interpretation (e.g., prescriptive vs. descriptive, forecasting, predictive analytics)	
3B5	Data Reporting and Visualization (e.g., audience analysis, dashboards, charts, graphs, data storytelling, automated reporting)	

The examination content outline is a product of a job analysis (aka role delineation study) that includes facilitation of discussions with a representative panel of 15-20 subject matter experts who identify competencies required for safe and effective pharmacy practice in this specialty area as well as a validation survey soliciting endorsement of the identified competencies from certified pharmacists in this specialty area. The job analysis process is conducted every 5 years to help ensure that the competencies in the examination content outline reflect current pharmacy practice in the specialty area.

Maintenance of Certification

Recertification Requirements	**[To Be Determined]**
Ethics and Professionalism	The Board of Pharmacy Specialties ascribes to the belief that certification carries an obligation for ethical behavior and professionalism necessary in all conduct. Candidates or certificants who are found to have exhibited unethical behavior or lack of professionalism may be prevented from pursuing certification or may be subject to suspension or withdrawal of certification, at the discretion of the Board of Pharmacy Specialties. Please refer to the BPS Ethics and Professionalism Policy: https://www.bpsweb.org/wp-content/uploads/2015/11/ethics.pdf