Examination Specifications
Solid Organ Transplantation Pharmacy
Board of Pharmacy Specialties

Name of Credential	BPS Board-Certified Transplant Pharmacist
Certification-Issuing Body	Board of Pharmacy Specialties
Designation Awarded	BCTXP
Level of Proficiency	Specialty Certification
Target Population	Pharmacists who delivery direct patient care and the safe and effective use of medications for patients in all phases of solid organ transplantation
Program Purpose	To validate that the pharmacist has the advanced knowledge and experience to optimize patient outcomes by managing complex medication regimens unique to the solid organ transplant population
Eligibility Requirements	• Graduation from a pharmacy program accredited by the Accreditation Council for Pharmacy Education (ACPE) or a program outside the United States that qualifies the individual to practice in the jurisdiction • Current, active license or registration to practice pharmacy in the United States or another jurisdiction • One of the following, within the past 7 years: o At least 4 years of specialty area practice with at least 50% of time spent in the scope defined by the exam content outline o Completion of PGY1 pharmacy residency and at least 2 years of specialty area practice experience with at least 50% of time spent in the scope defined by the exam content outline o Completion of PGY1 pharmacy residency and PGY2 pharmacy residency in Solid Organ Transplantation Pharmacy *Residency programs must be accredited by or deemed candidate status by the American Society of Health-System Pharmacists (ASHP) for PGY1, PGY2, and International Pharmacy Practice Residency Programs, or accredited by the Canadian Pharmacy Residency Board (CPRB) for year-1 programs.*
ECO Creation Date	March 2017

This document serves as examination specifications and certification scheme according to the respective requirements of the NCCA 2021 and ISO-IEC 17024:2012 standards.

For more information about the BCTXP examination program, please refer to the BPS website and candidate's guide: www.bpsweb.org/specialty-exams/candidates-guide/.

Examination Content Outline

1	Clinical Skills and Therapeutic Management
1.1	Evaluate patients for living donation or transplantation using appropriate assessment methods and resources to identify pharmacologic risks, contraindications, and other considerations
1.1.1	Organ-specific criteria for living donation
1.1.2	Organ-specific criteria for transplant listing
1.1.3	Pharmacologic risks (e.g., anticoagulation, drug interactions, adherence, intolerance)
1.1.4	Non-pharmacologic risks (e.g., comorbid diseases, immunologic risk, social support)
1.2	Interpret pertinent health-related information in accordance with evidence, standards, and guidelines throughout all phases of transplant-related care to determine when modifications to therapy are warranted
1.2.1	Diseases leading to end-stage organ failure
1.2.2	Common comorbid conditions
1.2.3	Medication history
1.2.4	Medication reconciliation
1.2.5	Allergy and drug intolerance history
1.2.6	Pertinent clinical data (e.g., laboratory and microbiologic data, pathology results)
1.2.7	Immunologic risk
1.2.8	Organ function
1.2.9	Integrity of drug absorption, distribution, metabolism, and elimination processes
1.3	Individualize treatment plans in accordance with evidence, standards, and guidelines
1.3.1	Immunomodulation
1.3.2	Evidence-based regimens for desensitization
1.3.3	Evidence-based regimens for induction
1.3.4	Evidence-based regimens for maintenance
1.3.5	Evidence-based regimens for management of rejection
1.3.6	Immunologic event monitoring
1.3.7	Drug-related safety, efficacy, and tolerability monitoring
1.3.8	Pre- and post-transplantation infections
1.3.9	Pre- and post-transplantation malignancies
1.3.10	Allograft-specific complications
1.3.11	Non-immunologic post-transplantation complications
1.3.12	Nonadherence
1.3.13	Pharmacogenetics and pharmacogenomics
1.3.14	Medication management in special populations
1.4	Facilitate continuity of care by communicating pertinent patient information during transitions of care to avoid medication-related errors and complications
1.4.1	Role and responsibilities of healthcare team members
1.4.2	Errors during transition
1.4.3	Challenges with transition between programs (e.g., pediatric to adult, one transplant center
1.4.4	Challenges with transition between settings (e.g., inpatient to outpatient, facility to facility)

1.4.5	Challenges with co-management (e.g., multi-organ transplant recipients, community vs. transplant providers)
1.5	Advocate for access to medications using prescription drug plans and other resources
1.5.1	Barriers in the prescription process (e.g., prior authorization, formulary)
1.5.2	Prescription coverage
1.5.3	Patient assistance programs (e.g., grants, free drugs, copay cards, vouchers)
1.5.4	Role of specialty pharmacies in transplantation
1.6	Implement a plan to overcome patient-specific barriers to care using continuous
1.6.1	Strategies for assessing patients' readiness and willingness to participate in their own care
1.6.2	Strategies for assessing adherence
1.6.3	Patient and caregivers' health literacy
1.6.4	Cultural competence and how it may affect the care of patients (e.g., culture, belief systems)
1.6.5	Humanistic factors (e.g., quality of life, end of life) and how they may affect the care of patients
1.6.6	Barriers to care (e.g., language, vision/hearing impaired, support)
1.6.7	Medical insurance plans and coverage (e.g., provider networks, ancillary services)
2	Administration and Practice Development
2.1	Establish sustained, collaborative, professional relationships with members of the interdisciplinary transplant team and consultant services to promote patient care across the continuum
2.1.1	Regulations, strategies, and resources surrounding collaborative practice agreements
2.1.2	Principles in establishing a scope of practice protocol
2.1.3	Identifying interprofessional roles and relationships
2.1.4	Strategies for implementing effective collaborative relationships
2.1.5	Strategies for communicating healthcare-related recommendations
2.1.6	Steps involved in continuity of care within healthcare systems
2.1.7	Appropriate documentation of patient care activities and recommendations in accordance with policies and guidelines
2.2	Establish institutional guidelines, policies, procedures, and formularies that are consistent with evidence, regulation, and/or current practice guidelines and standards in collaboration with other stakeholders to facilitate patient care
2.2.1	Evidence-based standards of care and clinical pathways
2.2.2	Cost effective treatment protocols and alternative and therapeutic interchange options
2.2.3	Considerations for evaluating the need for protocol development
2.2.4	Considerations for institutional drug use (e.g., formulary management, Pharmacy and Therapeutics Committee, special order drug systems)
2.2.5	Organizations, agencies, and accrediting bodies and their requirements (e.g., Centers for Medicare and Medicaid Services, United Network for Organ Sharing)
2.2.6	Policy and procedure utilization in practice settings
2.3	Participate in quality improvement activities to enhance the safety and effectiveness of medication-use processes in solid organ transplantation

2.3.1	Quality improvement opportunities, activities, and tools
2.3.2	Metrics for evaluating medication use
2.3.3	Medication safety principles pertinent to patients
2.3.4	Quality measures
2.4	Monitor compliance with guidelines, policies, procedures, and formularies in partnership with institutional leadership to identify shortcomings and implement performance improvement initiatives
2.4.1	Regulatory standards (e.g., Centers for Medicare and Medicaid Services, United Network for Organ Sharing/Organ Procurement and Transplantation Network, Scientific Registry for Transplant Recipients)
2.4.2	Metrics and tools (e.g., plan-do-study-act, root cause analysis, medication use evaluation)
2.4.3	Development and implementation of monitoring strategies
2.4.4	Methods used in performing data audits
2.4.5	Strategies for reporting data
2.5	Implement processes for cost effective care focusing on continuous quality improvement, patient safety, and outcomes to justify modifications in transplantation pharmacy services
2.5.1	Components of sustainable business models and related metrics (e.g., cost benefit analysis, cost effectiveness analysis, return on investment, clinical outcomes analyses)
2.5.2	Continuous quality improvement processes
2.5.3	Literature evaluating medication errors and patient safety (e.g., Institute of Medicine report, Beers criteria)
2.5.4	Principles of medication use evaluation
2.5.5	Process for reporting adverse drug reactions, medication errors, and incidents
2.5.6	Quality measures
3	Information Management and Education
3.1	Evaluate biomedical literature regarding study design, statistical analysis, and applicability of results to the solid organ transplantation population
3.1.1	Biomedical search strategies
3.1.2	Implications of study design, methodology, and statistical analysis on generalizability
3.1.3	Transplant study endpoints
3.1.4	Clinical application and limitations of published data and reports
3.2	Influence the body of transplant knowledge for the purpose of improving patient outcomes and medication use, either at the institutional level or nationally
3.2.1	Institutional review board requirements
3.2.2	Research study design
3.2.3	Publication and review process
3.2.4	Drug development and approval process
3.3	Educate solid organ transplant candidates, recipients, donors, and caregivers on issues related to medications and medication adherence
3.3.1	Education-related considerations (e.g., age, health literacy, culture)
3.3.2	Education-related techniques (e.g., teach-back, participatory)
3.3.3	Risk factors for non-adherence
3.3.4	Strategies for improving adherence

3.3.5	Interviewing strategies
3.3.6	Home monitoring
3.3.7	Pregnancy and contraception
3.3.7	Proper drug storage, handling, and disposal
3.4	Disseminate information regarding public health initiatives to promote health, safety, and wellness in transplant patients
3.4.1	Principles and practices of disease prevention (e.g., immunization, tobacco cessation)
3.4.2	Clinical practice guidelines and national initiatives (e.g., Healthy People 2020)
3.4.3	Clinical practice guidelines for health maintenance and screenings
3.5	Educate healthcare professionals, trainees, and other stakeholders concerning medication-related issues associated with the care of transplant patients
3.5.1	Pertinent literature, evidence-based treatment guidelines, and consensus statements
3.5.2	Publications by professional societies (e.g., American Society of Health-System Pharmacists, The International Society for Heart and Lung Transplantation, American College of Clinical Pharmacy, American Society of Transplantation)
3.5.3	Principles and methods for educating pharmacists, trainees, and other healthcare professionals on transplantation related issues
3.5.4	Risk evaluation and mitigation strategies
4	Public Health
4.1	Use population-level data to develop, implement, and assess practices or strategies for addressing health promotion and disease prevention
4.1.1	Immunization guidelines (e.g., Advisory Committee on Immunization Practices, Infectious Diseases Society of America, American Society of Transplantation)
4.1.2	Principles and practices of wellness, disease prevention, and treatment (e.g., smoking cessation, cancer screening, sexually transmitted infections)
4.2	Provide information and guidance to the public regarding organ donation and allocation
4.2.1	Transplant disparities (e.g., age, race, distance from transplant center, socioeconomic)
4.2.2	Allocation scoring systems
4.2.3	Community outreach (e.g., dispelling myths surrounding donation, living donor education)
4.2.4	Cultural competence

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.

Examination Administration and Scoring

Number of Examination Items		Certification Exam	Recertification Exam
1	Clinical Skills and Therapeutic Management	114	65
2	Administration and Practice Development	26	15
3	Information Management and Education	26	15
4	Public Health	9	5
	TOTAL	**175**	**100**

	Certification Exam	Recertification Exam
Exam Administration Time	4 hours 23 minutes	2 hours 30 minutes
Minimum Score	200	200
Minimum Passing Score	500	500
Maximum Score	800	800

The certification examination is split into two parts with an optional break (up to 30 minutes) in between. Part 1 consists of 100 items (2 hours 30 minutes) and Part 2 consists of 75 items (1 hour 53 minutes).

Maintenance of Certification

Recertification Requirements	Pharmacists who earn the BCTXP designation will be required to maintain their certification over a 7-year period by completing one of the following recertification pathways: • Achieving a passing score on the BCTXP recertification examination in their seventh year following initial certification • Earning 100 hours of BPS-approved continuing pharmacy education (CPE) credit *Self-reported ACPE-accredited CPE activities that align with the examination content outline can be used towards recertification hours. Certificants must self-report at least 5 hours, but no more than 15 hours annually during the transition window (effective from 1/1/2022 to 12/31/2023).* *The Solid Organ Transplantation Pharmacy Preparatory Review and Recertification Course offered by any approved providers may only be completed for recertification credit up to two times, in nonconsecutive years, during the 7-year recertification cycle.* *For more details regarding recertification, please refer to the BPS Recertification Guide.*
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