



**Crosswalk Between Old PTCE Knowledge Statements and Current Knowledge Areas.**

<b>Old Knowledge</b>	<b>Old Knowledge Description</b>	<b>Current Knowledge Area*</b>	<b>Current Knowledge Area Description</b>
01	Knowledge of federal, state, and/or practice site regulations, codes of ethics, and standards pertaining to the practice of pharmacy	2.0	Pharmacy Law and Regulations
02	Knowledge of pharmaceutical, medical, and legal developments which impact on the practice of pharmacy	2.0	Pharmacy Law and Regulations
03	Knowledge of state-specific prescription transfer regulations		
04	Knowledge of pharmaceutical and medical abbreviations and terminology	6.2	Intake, interpretation, and data entry
05	Knowledge of generic and brand names of pharmaceuticals	1.1	Generic and brand names of pharmaceuticals
06	Knowledge of therapeutic equivalence	1.2	Therapeutic equivalence
07	Knowledge of epidemiology		
08	Knowledge of risk factors for disease		
09	Knowledge of anatomy and physiology	1.4	Strengths/dose, dosage forms, physical appearance, routes of administration, and duration of drug therapy
10	Knowledge of signs and symptoms of disease states		
11	Knowledge of standard and abnormal laboratory values		
12	Knowledge of drug interactions (such as drug-disease, drug-drug, drug-laboratory, drug-nutrient)	1.3	Drug interactions (e.g., drug-disease, drug-drug, drug-dietary supplement, drug-OTC, drug-laboratory, drug-nutrient)
13	Knowledge of strengths/dose, dosage forms, physical appearance, routes of administration, and duration of drug therapy	1.4	Strengths/dose, dosage forms, physical appearance, routes of administration, and duration of drug therapy
14	Knowledge of effects of patient's age (for example, neonates, geriatrics) on drug and non-drug therapy		
15	Knowledge of drug information sources including printed and electronic reference materials	9.2	Databases, pharmacy computer applications, and documentation management (e.g., user access, drug database, interface, inventory report, usage reports, override reports, diversion reports)
16	Knowledge of pharmacology (for example, mechanism of action)	1.0	Pharmacology for Technicians
17	Knowledge of common and severe side or adverse effects, allergies, and therapeutic contraindications associated with medications	1.5	Common and severe side or adverse effects, allergies, and therapeutic contraindications associated with medications



18	Knowledge of drug indications	1.6	Dosage and indication of legend, OTC medications, herbal and dietary supplements
19	Knowledge of relative role of drug and non-drug therapy (for example, herbal remedies, lifestyle modification, smoking cessation)		
20	Knowledge of practice site policies and procedures regarding prescriptions or medication orders	6.0	Medication Order Entry and Fill Process
21	Knowledge of practice site policies and procedures regarding disease prevention and health promotion initiatives (e.g. immunization delivery, health screenings, and wellness checks)		
22	Knowledge of procedures for related to prioritization of prescription/medication order processing		
23	Knowledge of information to be obtained from patient/patient's representative (for example, demographic information, allergy, third-party information)	6.2	Intake, interpretation, and data entry
24	Knowledge of required prescription order refill information	2.0, 6.0	Pharmacy Law and Regulations ; Medication Order Entry and Fill Process
25	Knowledge of formula to verify the validity of a prescriber's DEA number	2.5	Formula to verify the validity of a prescriber's DEA number (DEA)
26	Knowledge of techniques for detecting forged or altered prescriptions	2.4	Controlled substance documentation requirements for receiving, ordering, returning, loss/theft, destruction (DEA)
27	Knowledge of techniques for detecting prescription errors (for example, abnormal doses, early refill, incorrect quantity, incorrect patient ID #, incorrect drug)	4.6	Common safety strategies (e.g., tall man lettering, separating inventory, leading and trailing zeros, limit use of error prone abbreviations)
28	Knowledge of error prevention strategies for data entry	4.1	Error prevention strategies for data entry (e.g., prescription or medication order to correct patient)
29	Knowledge of effects of patient specific factors (for example, disabilities, language barriers, SES, genetic)	1.5	Common and severe side or adverse effects, allergies, and therapeutic contraindications associated with medications
30	Knowledge of the impact of cultural diversity on healthcare belief and practices		
31	Knowledge of techniques, equipment, and supplies for drug administration (for example, insulin syringes and IV tubing)	3.5	Selection and use of equipment and supplies
32	Knowledge of OTC medications and dietary supplements	1.6	Dosage and indication of legend, OTC medications, herbal and dietary supplements



Functional Area 1: Assisting the Pharmacist in Serving Patients

33	Knowledge of monitoring and screening equipment (for example, blood pressure cuffs, glucose monitors)		
34	Knowledge of proper and techniques to perform therapeutic screening and/or monitoring (e.g. cholesterol, blood pressure cuff, glucose meter)		
35	Knowledge of durable and non-durable medical equipment, devices, and supplies (for example, ostomies, orthopedic devices, pumps)		
36	Knowledge of proper storage conditions	7.4	Storage requirements (e.g., refrigeration, freezer, warmer)
37	Knowledge of automated dispensing technology	6.7	Dispensing process (e.g., validation, documentation and distribution)
38	Knowledge of packaging requirements	6.6	Packaging requirements (e.g., type of bags, syringes, glass, pvc, child resistant, light resistant)
39	Knowledge of NDC number components	7.1	Function and application of NDC, lot numbers and expiration dates
40	Knowledge of purpose for lot numbers and expiration dates	7.1	Function and application of NDC, lot numbers and expiration dates
41	Knowledge of information for prescription or medication order labels	6.5	Labeling requirements (e.g., auxiliary and warning labels, expiration date, patient specific information)
42	Knowledge of requirements regarding auxiliary labels	6.5	Labeling requirements (e.g., auxiliary and warning labels, expiration date, patient specific information)
43	Knowledge of requirements regarding patient package inserts	4.2	Patient package insert and medication guide requirements (e.g., special directions and precautions)
44	Knowledge of special directions and precautions for patient/patient's representative regarding preparation and use of medications	6.4	Fill process (e.g., select appropriate product, apply special handling requirements, measure, and prepare product for final check)
45	Knowledge of techniques for assessing patient's compliance with prescription or medication order	4.3	Identify issues that require pharmacist intervention (e.g., DUR, ADE, OTC recommendation, therapeutic substitution, misuse, missed dose)
46	Knowledge of action to be taken in the event of a missed dose	4.3	Identify issues that require pharmacist intervention (e.g., DUR, ADE, OTC recommendation, therapeutic substitution, misuse, missed dose)
47	Knowledge of requirements for mailing medications		
48	Knowledge of delivery systems for distributing medications (for example, pneumatic tube, robotics)	1.4	Strengths/dose, dosage forms, physical appearance, routes of administration, and duration of drug therapy
49	Knowledge of requirements for dispensing controlled substances	2.0, 6.0	Pharmacy Law and Regulations ; Medication Order Entry and Fill Process



50	Knowledge of requirements for dispensing investigational drugs		
51	Knowledge of record-keeping requirements for medication dispensing	2.0	Pharmacy Law and Regulations
52	Knowledge of automatic stop orders		
53	Knowledge of restricted medication orders	2.7	Restricted drug programs and related prescription-processing requirements (e.g., thalidomide, isotretinoin, clozapine)
54	Knowledge of quality improvement methods (for example, matching NDC number, double-counting narcotics)	5.0	Pharmacy Quality Assurance
55	Knowledge of pharmacy calculations (for example, algebra, ratio and proportions, metric conversions, IV drip rates, IV admixture calculations)	1.0, 3.0	Pharmacology for Technicians; Sterile and Non-Sterile Compounding
56	Knowledge of measurement systems (for example, metric and avoirdupois)	6.0	Medication Order Entry and Fill Process
57	Knowledge of drug stability	3.4	Determine product stability (e.g., beyond use dating, signs of incompatibility)
58	Knowledge of physical and chemical incompatibilities	3.4	Determine product stability (e.g., beyond use dating, signs of incompatibility)
59	Knowledge of equipment calibration techniques	3.5	Selection and use of equipment and supplies
60	Knowledge of procedures to prepare IV admixtures	3.6	Sterile compounding processes
61	Knowledge of procedures to prepare chemotherapy	3.6	Sterile compounding processes
62	Knowledge of procedures to prepare total parenteral nutrition (TPN) solutions	3.6	Sterile compounding processes
63	Knowledge of procedures to prepare reconstituted injectable and non-injectable medications	3.6	Sterile compounding processes
64	Knowledge of specialized procedures to prepare injectable medications (for example, epidurals and patient controlled analgesic [PCA] cassettes)	3.6	Sterile compounding processes
65	Knowledge of procedures to prepare radiopharmaceuticals		
66	Knowledge of procedures to prepare oral dosage forms (for example, tablets, capsules, liquids) in unit-dose or non-unit-dose packaging	6.0	Medication Order Entry and Fill Process
67	Knowledge of procedures to compound sterile non-injectable products (for example, eye drops)	3.6	Sterile compounding processes
68	Knowledge of procedures to compound non-sterile products (for example, ointments, mixtures, liquids, emulsions)	3.7	Non-sterile compounding processes



69	Knowledge of procedures to prepare ready-to-dispense multidose packages (for example, ophthalmics, otics, inhalers, topicals, transdermals)	6.0	Medication Order Entry and Fill Process
70	Knowledge of aseptic techniques and clean room requirements(for example, laminar flow hood, filters)	3.1	Infection control (e.g., hand washing, PPE)
71	Knowledge of infection control procedures	3.1	Infection control (e.g., hand washing, PPE)
72	Knowledge of requirements for handling hazardous products and disposing of hazardous waste	3.2	Handling and disposal requirements (e.g., receptacles, waste streams)
73	Knowledge of documentation requirements for controlled substances, investigational drugs, and hazardous wastes	2.4	Controlled substance documentation requirements for receiving, ordering, returning, loss/theft, destruction (DEA)
74	Knowledge of pharmacy-related computer software for documenting the dispensing of prescriptions or medication orders	9.1	Pharmacy-related computer applications for documenting the dispensing of prescriptions or medication orders (e.g., maintaining the electronic medical record, patient adherence, risk factors, alcohol drug use, drug allergies, side effects)
75	Knowledge of manual systems for documenting the dispensing of prescriptions or medication orders	6.7	Dispensing process (e.g., validation, documentation and distribution)
76	Knowledge of customer service principles	5.5	Productivity, efficiency, and customer satisfaction measures
77	Knowledge of communication techniques	5.4	Communication channels necessary to ensure appropriate follow-up and problem resolution (e.g., product recalls, shortages)
78	Knowledge of federal rules and regulations regarding confidentiality	2.8	Professional standards related to data integrity, security, and confidentiality (e.g., HIPAA, backing up and archiving)
79	knowledge of payment procedures (cash, credit, check)		
80	Knowledge of reimbursement policies and plans	8.2	Third party resolution (e.g., prior authorization, rejected claims, plan limitations)
81	Knowledge of procedures to resolve third party rejected claims	8.2	Third party resolution (e.g., prior authorization, rejected claims, plan limitations)
82	Knowledge of procedures to obtain prior authorization	8.2	Third party resolution (e.g., prior authorization, rejected claims, plan limitations)
83	Knowledge of legal requirements for pharmacist counseling of patient	2.9	Requirement for consultation (e.g., OBRA'90)
84	Knowledge of procedures to prepare enteral products and pumps	1.4	Strengths/dose, dosage forms, physical appearance, routes of administration, and duration of drug therapy



and Inventory Control Systems	01	Knowledge of drug product laws and regulations and professional standards related to obtaining medication supplies, durable medical equipment, and products (for example, Food, Drug and Cosmetic Act; Controlled Substances Act; Prescription Drug Marketing Act; USP-NF; NRC standards)	2.0	Pharmacy Law and Regulations
	02	Knowledge of pharmaceutical manufacturer and wholesaler policies and procedures for purchasing pharmaceuticals	7.3	Ordering and receiving processes (e.g., maintain par levels, rotate stock)
	03	Knowledge of purchasing policies, procedures, and practices	7.3	Ordering and receiving processes (e.g., maintain par levels, rotate stock)
	04	Knowledge of dosage forms	1.4	Strengths/dose, dosage forms, physical appearance, routes of administration, and duration of drug therapy
	05	Knowledge of formulary or approved stock list	7.2	Formulary or approved/preferred product list
	06	Knowledge of policies, procedures, and practices for inventory control (e.g. par and reorder levels, turnover rates, drug usage patterns, and perpetual inventory)	7.3	Ordering and receiving processes (e.g., maintain par levels, rotate stock)
	07	Knowledge of inventory receiving process	7.3	Ordering and receiving processes (e.g., maintain par levels, rotate stock)
	08	Knowledge of bioavailability standards (for example, generic substitutes)	1.2	Therapeutic equivalence
	09	Knowledge of the use of DEA controlled substance ordering forms	2.4	Controlled substance documentation requirements for receiving, ordering, returning, loss/theft, destruction (DEA)
	10	Knowledge of legal and regulatory requirements and professional standards (e.g. USP, FDA, DEA, JAOC) for preparing, labeling, dispensing, distributing, and administering medications (e.g. prepackaging, sterile products, compounding)	2.0, 6.0	Pharmacy Law and Regulations ; Medication Order Entry and Fill Process
	11	Knowledge of legal and regulatory requirements regarding record-keeping for repacked, recalled, batch prepared, and returned pharmaceuticals, durable and non-durable medical equipment, devices, and supplies (including investigational and hazardous substances)	2.0, 7.0	Pharmacy Law and Regulations ; Pharmacy Inventory Management
	12	Knowledge of products used in packaging and repackaging (for example, child-resistant caps and light-protective unit-dose packaging)	6.6	Packaging requirements (e.g., type of bags, syringes, glass, pvc, child resistant, light resistant)



Functional Area 2: Maintaining Medication :

13	Knowledge of risk management opportunities (for example, dress code, personal protective equipment [PPE], needle recapping)	5.3	Risk management guidelines and regulations (e.g., error prevention strategies)
14	Knowledge of the FDA's classifications of recalls	2.10	FDA's recall classification
15	Knowledge of systems to identify and return expired and unsalable products	7.5	Removal (e.g., recalls, returns, outdates, reverse distribution)
16	Knowledge of rules and regulations for the removal and disposal of medications and durable/non-durable medical equipment	2.0, 7.0	Pharmacy Law and Regulations ; Pharmacy Inventory Management
17	Knowledge of legal and regulatory requirements for the removal and disposal/destruction of controlled substances	2.0, 7.0	Pharmacy Law and Regulations ; Pharmacy Inventory Management
18	Knowledge of legal and regulatory requirements for the removal and disposal/destruction of radiopharmaceuticals		
19	Knowledge of legal and regulatory requirements governing operations of pharmacies	2.0	Pharmacy Law and Regulations
20	Knowledge of medication distribution and control systems requirements for the use of medications in various practice settings (for example, automated dispensing systems, bar coding, nursing stations, crash carts)	6.7	Dispensing process (e.g., validation, documentation and distribution)
21	Knowledge of preparation, storage requirements, and documentation for medications compounded in anticipation of prescriptions or medication orders	3.0, 6.0	Sterile and Non-Sterile Compounding; Medication Order Entry and Fill Process
22	Knowledge of repackaging, storage requirements, and documentation for finished dosage forms prepared in anticipation of prescriptions or medication orders	2.12	Record keeping for repackaged and recalled products and supplies (TJC, BOP)
23	Knowledge of policies, procedures, and practices regarding storage and handling of hazardous materials and wastes (for example, Materials Safety Data Sheet [MSDS])	2.1	Storage, handling, and disposal of hazardous substances and wastes (e.g., MSDS)
24	Knowledge of medication distribution and control systems requirements for controlled substances, investigational drugs, and hazardous materials and wastes	2.0	Pharmacy Law and Regulations
25	Knowledge of the written, oral, and electronic communication channels necessary to ensure appropriate follow-up and problem resolution (for example, product recalls, supplier shorts)	5.4	Communication channels necessary to ensure appropriate follow-up and problem resolution (e.g., product recalls, shortages)





	26	Knowledge of quality assurance policies, procedures, and practices for medication and inventory control systems	5.1	Quality assurance practices for medication and inventory control systems (e.g., matching National Drug Code (NDC) number, bar code, data entry)
ctice	01	Knowledge of the practice setting's mission, goals and objectives, organizational structure, and policies and procedures		
	02	Knowledge of lines of communication throughout the organization	5.4	Communication channels necessary to ensure appropriate follow-up and problem resolution (e.g., product recalls, shortages)
	03	Knowledge of principles of resource allocation (for example, scheduling, cross training, work flow)		
	04	Knowledge of productivity, efficiency, and customer satisfaction measures	5.5	Productivity, efficiency, and customer satisfaction measures
	05	Knowledge of written, oral, and electronic communication systems	5.4, 9.0	Communication channels necessary to ensure appropriate follow-up and problem resolution (e.g., product recalls, shortages); Pharmacy Information System Usage and Application
	06	Knowledge of legal and regulatory requirements for licensure, registration, and/or certification		
	07	Knowledge of roles and responsibilities of pharmacists, pharmacy technicians, and other pharmacy employees	2.13	Professional standards regarding the roles and responsibilities of pharmacists, pharmacy technicians, and other pharmacy employees (TJC, BOP)
	08	Knowledge of legal and regulatory requirements for personnel, facilities, equipment, and supplies (for example, space requirements, prescription file storage, cleanliness, reference materials, storage of radiopharmaceuticals)	2.15	Facility, equipment, and supply requirements (e.g., space requirements, prescription file storage, cleanliness, reference materials) (TJC, USP, BOP)
	09	Knowledge of professional standards (for example, JCAHO) for personnel, facilities, equipment, and supplies	2.15	Facility, equipment, and supply requirements (e.g., space requirements, prescription file storage, cleanliness, reference materials) (TJC, USP, BOP)
	10	Knowledge of quality improvement standards and guidelines	5.0	Pharmacy Quality Assurance
	11	Knowledge of state board of pharmacy regulations		
	12	Knowledge of storage requirements and expiration dates for medications, durable/non-durable equipment and supplies (including hazardous and investigational)	7.4	Storage requirements (e.g., refrigeration, freezer, warmer)
	13	Knowledge of policies and procedures for handling, disposal/destruction of pharmaceuticals, including hazardous substances and investigational	2.1, 2.2	Storage, handling, and disposal of hazardous substances and wastes (e.g., MSDS); Hazardous substances exposure, prevention and treatment (e.g., eyewash, spill kit, MSDS)





Functional Area 3: Participating in the Administration and Management of Pharmacy Practice

14	Knowledge of procedures for the treatment of exposure to hazardous substances (for example, eyewash)	2.2	Hazardous substances exposure, prevention and treatment (e.g., eyewash, spill kit, MSDS)
15	Knowledge of security systems for the protection of employees, customers, and property		
16	Knowledge of legal and regulatory requirements and professional standards for infection control (e.g. laminar flow hood, clean room, hand washing, clean counting trays etc)	2.11	Infection control standards (e.g., laminar air flow, clean room, hand washing, cleaning counting trays, countertop, and equipment) (OSHA, USP 795 and 797)
17	Knowledge of infection control policies and procedures	3.1	Infection control (e.g., hand washing, PPE)
18	Knowledge of sanitation requirements (for example, hand washing, cleaning counting trays, countertop, and equipment)	2.11	Infection control standards (e.g., laminar air flow, clean room, hand washing, cleaning counting trays, countertop, and equipment) (OSHA, USP 795 and 797)
19	Knowledge of documentation requirements for infection control and equipment maintenance and calibration	2.11	Infection control standards (e.g., laminar air flow, clean room, hand washing, cleaning counting trays, countertop, and equipment) (OSHA, USP 795 and 797)
20	Knowledge of equipment calibration and maintenance procedures	3.5	Selection and use of equipment and supplies
21	Knowledge of supply procurement procedures	7.3	Ordering and receiving processes (e.g., maintain par levels, rotate stock)
22	Knowledge of technology used in the preparation, delivery, and administration of medications (for example, robotics, Baker cells, automated TPN equipment, Pyxis, infusion pumps)	6.0	Medication Order Entry and Fill Process
23	Knowledge of the Americans with Disabilities Act requirements (for example, physical accessibility)		
24	Knowledge of manual and computer-based systems for storing, retrieving, and using pharmacy-related pharmacy information (for example, drug interactions, patient profiles, generating labels)	9.2	Databases, pharmacy computer applications, and documentation management (e.g., user access, drug database, interface, inventory report, usage reports, override reports, diversion reports)
25	Knowledge of legal and regulatory requirements and professional standards related to data integrity, security confidentiality	2.8	Professional standards related to data integrity, security, and confidentiality (e.g., HIPAA, backing up and archiving)
26	Knowledge of policies and procedures for emergencies (e.g. fire, natural disaster, terrorism)		
27	Knowledge of policies and procedures for unplanned computer downtime.		
28	Knowledge of legal requirements and procedures for backup and archiving electronic data		



29	Knowledge of the legal requirements regarding record keeping, documentation, and record retention (length of time prescriptions stay on file.)documentation	2.6	Record keeping, documentation, and record retention (e.g., length of time prescriptions are maintained on file)
30	Knowledge of third-party reimbursement systems	8.0	Pharmacy Billing and Reimbursement
31	Knowledge of healthcare reimbursement systems (for example, home health, respiratory medications, eligibility and reimbursement)	8.1	Reimbursement policies and plans (e.g., HMOs, PPO, CMS, private plans)
32	Knowledge of billing and accounting policies and procedures	8.2	Third party resolution (e.g., prior authorization, rejected claims, plan limitations)
33	Knowledge of pharmacy benefits management systems	8.3	Third-party reimbursement systems (e.g., PBM, medication assistance programs, coupons, and self-pay)
34	Knowledge of information sources used to obtain data in a quality improvement system (for example, the patient's chart, patient profile, computerized information systems, medication administration record)	9.2	Databases, pharmacy computer applications, and documentation management (e.g., user access, drug database, interface, inventory report, usage reports, override reports, diversion reports)
35	Knowledge of procedures to document occurrences such as medication errors, adverse effects, and product integrity (for example, FDA Med Watch Program)	4.0, 5.0	Medication Order Entry and Fill Process; Pharmacy Inventory Management
36	Knowledge of legal and regulatory requirements in staff training and continuing education	2.0	Pharmacy Law and Regulations
37	Knowledge of legal and regulatory requirements in employee performance evaluation techniques	2.0	Pharmacy Law and Regulations
38	Knowledge of standards for employee performance feedback		

\* A blank in the new knowledge columns indicates that the knowledge has been dropped in the new blueprint based on the most recent job analysis.