2020 PTCB Certified Pharmacy Technician (CPhT) Knowledge Reference

How to Use This Document

PTCE Knowledge Areas	Required	Recommended
Statements appearing on the PTCE Content Outline are highlighted in blue; those requiring calculations-based knowledge are denoted with an asterisk (*). These blue statements are required of competent CPhTs and demonstrated primarily by passing the PTCE.	White knowledge statements are also required of competent CPhTs and demonstrated through education/training or a combination of work experience and other preparation activities.	Gray knowledge statements are recommended for competent CPhTs, but not required.
	For white and gray statements, only a basic/definitional understanding is expected.	

Medications

PTCE Knowledge Areas	Required	Recommended
1.1 Generic names, brand names, and classifications of medications 1.2 Therapeutic equivalence 1.3 Common and life-threatening drug interactions and contraindications (e.g., drug-disease, drug-drug, drug-dietary supplement, drug-laboratory, drug-nutrient) 1.4* Strengths/dose, dosage forms, routes of administration, special handling and administration instructions, and duration of drug therapy 1.5 Common and severe medication side effects, adverse effects, and allergies 1.6 Indications of medications and dietary supplements 1.7* Drug stability (e.g., oral suspensions, insulin, reconstitutables, injectables, vaccinations) 1.8 Narrow therapeutic index (NTI) medications 1.9 Physical and chemical incompatibilities related to non-sterile compounding and reconstitution 1.10 Proper storage of medications (e.g., temperature ranges, light sensitivity, restricted access)	*Intentionally blank*	*Intentionally blank*

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Federal Requirements

PTCE Knowledge Areas	Required	Recommended
2.1 Federal requirements for handling and disposal of non-hazardous, hazardous, and pharmaceutical substances and waste 2.2* Federal requirements for controlled substance prescriptions (i.e., new, refill, transfer) and DEA controlled substance schedules 2.3 Federal requirements (e.g., DEA, FDA) for controlled substances (i.e., receiving, storing, ordering, labeling, dispensing, reverse distribution, take-back programs, and loss or theft of) 2.4* Federal requirements for restricted drug programs and related medication processing (e.g., pseudoephedrine, Risk Evaluation and Mitigation Strategies [REMS]) 2.5 FDA recall requirements (e.g., medications, devices, supplies, supplements, classifications)	• Federal requirements (e.g., DEA, FDA) for receiving, ordering, refilling, labeling, dispensing, returning, take-back programs, and loss or theft of non-controlled substances • OSHA requirements for prevention and treatment of hazardous substances exposure (e.g., eyewash, spill kit) • DEA requirements for record keeping, documentation, and record retention (i.e., minimum length of time controlled substances and records are maintained on file) • OSHA Hazard Communication Standard (i.e., "Employee Right to Know") • Federal requirements for availability of medications (i.e., Rx, OTC, behind the counter) • Federal requirements for non-controlled substance prescription transfer • FDA requirements for consumer medication information and Medication Guides • Methods to electronically verify a prescriber's DEA number • OBRA-90 requirement for consultation • Process to determine the state, federal, and local laws and regulations that apply to one's practice site • HIPAA requirements for confidentiality	• FDA requirements for receiving, storing, ordering, labeling, dispensing, returning, and loss or theft of investigational drugs • OSHA requirements for addressing bloodborne pathogen exposure (e.g., accidental needle stick, post-exposure prophylaxis [PEP]) • ADA requirements to address patient physical limitations (e.g., easy-off caps, increased font size, script-talk machines, braille) • FDA product tracking and tracing requirements (i.e., Drug Supply Chain Security Act [DSCSA])

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State Requirements and Practice Standards

PTCE Knowledge Areas	Required	Recommended
Intentionally blank	• State requirements for licensure, registration, and/or certification of pharmacy technicians • State requirements regarding the roles and responsibilities of pharmacists, pharmacy technicians, and other pharmacy employees • State requirements regarding facilities, equipment, and supply (e.g., space requirements, prescription file storage, cleanliness, reference materials)	• The Joint Commission standards and OSHA requirements for employer staff training • The Joint Commission standards for record-keeping of received, repackaged, batch-prepared, recalled, and returned products and supplies • The Joint Commission standards and CMS conditions of participation for the operation of pharmacies

Patient Safety and Quality Assurance

PTCE Knowledge Areas	Required	Recommended
3.1 High-alert/risk medications and look-alike/sound-alike [LASA] medications 3.2 Error prevention strategies (e.g., prescription or medication order to correct patient, Tall Man lettering, separating inventory, leading and trailing zeros, bar code usage, limit use of error-prone abbreviations) 3.3* Issues that require pharmacist intervention (e.g., drug utilization review [DUR], adverse drug event [ADE], OTC recommendation, therapeutic substitution, misuse, adherence, post-immunization follow-up, allergies, drug interactions) 3.4 Event reporting procedures (e.g., medication errors, adverse effects, and product integrity, MedWatch, near miss, root-cause analysis [RCA]) 3.5* Types of prescription errors (e.g., abnormal doses, early refill, incorrect quantity, incorrect patient, incorrect drug) 3.6 Hygiene and cleaning standards (e.g., handwashing, personal protective equipment [PPE], cleaning counting trays, countertop, and equipment)	• Effects of patient-specific factors on drug and non-drug therapy (e.g., cultural beliefs, disabilities, language barriers, socioeconomic status) • Products used in packaging and repackaging (e.g., type of bags, syringes, glass, PVC, child-resistant caps and light-protective unit-dose packaging) • Information sources used to obtain data in a quality improvement process (e.g., the patient's chart, patient's medication profile, computerized information systems, medication administration record, immunization registry, medication therapy management [MTM] platforms) • Quality assurance practices for medication and inventory control systems (e.g., bar code, data entry) • Requirements and strategies for addressing errors in practice (e.g., quality improvement teams, adverse drug reaction reporting, opportunity/suggestion cards)	• Equipment calibration techniques and documentation requirements (e.g., balance, IV pumps) • Measures of productivity, efficiency, and customer satisfaction • Automatic stop orders

Order Entry and Processing

PTCE Knowledge Areas	Required	Recommended
4.1* Procedures to compound non-sterile products (e.g., ointments, mixtures, liquids, emulsions, suppositories, enemas) 4.2* Formulas, calculations, ratios, proportions, alligations, conversions, Sig codes (e.g., b.i.d., t.i.d., Roman numerals), abbreviations, medical terminology, and symbols for days supply, quantity, dose, concentration, dilutions 4.3* Equipment/supplies required for drug administration (e.g., package size, unit dose, diabetic supplies, spacers, oral and injectable syringes) 4.4* Lot numbers, expiration dates, and National Drug Code (NDC) numbers 4.5 Procedures for identifying and returning dispensable, non-dispensable, and expired medications and supplies (e.g., credit return, return to stock, reverse distribution)	• Procedure to stage prescriptions for final verification • Information to be obtained from patient/patient representatives and/or health care providers (e.g., medical and medication history, demographic information, allergy, opt-in services information, third-party information) • Factors that determine prioritization of prescription/medication order processing (e.g., stat, maintenance, waiting)	• Procedures and environmental controls to prepare non-sterile hazardous medications (e.g., negative pressure rooms) • Documentation and record-keeping requirements (e.g., lot number, expiration date, batch preparation, compounding record) • Medication mailing requirements (e.g., controlled and non-controlled, cold chain packing requirements) • Procedures for assigning beyond use dates for non-sterile compounds • Delivery systems for distributing different medications (e.g., pneumatic tube, robotics, runners) • Techniques for detecting forged, altered, or invalid prescriptions (e.g., watermarks, signatures, handwriting, quantity) • Procedures to clean, disinfect, and decontaminate compounding areas • Types of enteral products and supplies

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Inventory Management

PTCE Knowledge Areas	Required	Recommended
Intentionally blank	• Procedures to address improperly stored inventory (e.g., out of range temperature issues) • Formulary or approved/preferred product list • Suitable alternatives for ordering (e.g., transferring or borrowing medications from another pharmacy) • Medication quality control system requirements (e.g., automated dispensing systems, bar coding, clinic and nursing floor stock, crash carts, emergency kits) • Procedures for ordering medications and supplies • Inventory control practices and record keeping (e.g., par and reorder levels, turnover rates, drug usage patterns, and perpetual inventory) • Procedures to perform physical inventories (e.g., annual, controlled substance)	• Automated equipment inventory management (e.g., configuring drawers, setting par level)

Administrative and Management

PTCE Knowledge Areas	Required	Recommended
Intentionally blank	• Administrative duties and procedures for pharmacies such as managing files and records, transcription, and other office procedures and terminology • Purpose and proper use of pharmacy reports (e.g., inventory reports, diversion reports, discrepancy reports, override reports, usage reports, input accuracy reports, business summary reports) • Process for handling and destroying confidential/classified information	• Preventative maintenance scheduling for automated equipment • Basic data analysis (e.g., interpreting trends in seasonal demands, productivity, margins, staffing needs, drug discrepancies, shortages)

Health and Wellness

PTCE Knowledge Areas	Required	Recommended
Intentionally blank	*Intentionally blank*	• Devices used for monitoring and/or screening (e.g., automatic blood pressure monitor, glucose monitors test strips/lancets, point-of-care tests) • Strategies for assessing a patient's compliance with prescriptions or medication orders (e.g., patterns of early/late refills, medication therapy management [MTM]) • Patient factors that influence drug effects (e.g., age, height, genetics, weight, gender, diet) • Anatomy and physiology of body systems and major organs • Standard laboratory tests and their use • Durable and non-durable equipment, devices, and supplies (e.g., ostomy supplies, orthopedic devices, pumps) • Procedures and techniques for documenting disease prevention and health promotion initiatives (e.g., immunizations, health screenings, genome testing, and wellness checks) • Risk factors for disease (e.g., alcohol and illicit drug use, smoking, obesity, sedentary lifestyle) • Signs, symptoms, and origins of disease states • Immunization schedules • Procedures to obtain vaccine information statements

Billing and Reimbursement

PTCE Knowledge Areas	Required	Recommended
Intentionally blank	*Intentionally blank*	• Characteristics of reimbursement policies and plans (e.g., HMOs, PPO, CMS, Affordable Care Act, private plans, Medicare and Medicaid plans, TriCare) • Level of service billing (e.g., immunization services, point-of-care testing, durable medical equipment, medication therapy management [MTM], clinical services, medical vs. prescription coverage, Medicare Part B) • Strategies to minimize patient out-of-pocket costs (e.g., formulary tiers) • Strategies to resolve third party rejected claims • Factors influencing reimbursement rates, policies, and plans • Third-party reimbursement systems (e.g., PBM, medication assistance programs, coupons, 340B vouchers) • Procedures to obtain prior authorization • Healthcare reimbursement systems (e.g., home health, long-term care, home infusion) • Reimbursement models (e.g., AWP, dispensing fee, cost) • Procedures to coordinate benefits (e.g., dual coverage and copay reduction plans) • Medications included in Centers for Medicare & Medicaid Services (CMS) five-star quality rating system