National Healthcareer Association®

NHA Certified Pharmacy Technician (CPhT)
Test Plan for the ExCPT Exam

100 scored items, 20 pretest
Exam Time: 2 hours 10 minutes

This document provides both a summary and detailed outline of the topics and associated weighting that may be covered on the ExCPT Certification Exam. The summary exam outline contains the domains and sub-domains covered on the exam, along with the number of items per domain and related sub-domain.

The detailed outline adds to the summary outline by expanding each domain and sub-domain with associated task and knowledge statements. ***Task*** *statements reflect duties that a candidate will need to know how to properly perform, while* ***knowledge*** *statements reflect information that a candidate will need to know and are in support of task statements. Items on the exam may require recall and critical thinking pertaining to a knowledge statement, a task statement, or both.*

Summary ExCPT Exam Outline:

Domain	# of Items on Exam
1. Overview and Laws	**25**
A. Role, Scope of Practice, and General Duties of the Pharmacy Technician	11
B. Laws and Regulations	8
C. Controlled Substances	6
2. Drugs and Drug Therapy	**15**
A. Drug Classification	9
B. Frequently Prescribed Medications	6
3. Dispensing Process	**45**
A. Prescription and Medication Order Intake and Entry	15
B. Preparing and Dispensing Prescriptions	13
C. Calculations	7

* Test Plan based on results of the Job Analysis Study completed in 2016

D. Sterile and Nonsterile Products, Compounding, Unit Dose, and Repackaging	10
4. Medication Safety and Quality Assurance	15
Total	100

Detail ExCPT Exam Outline:

Domain 1: Overview and Laws	**25**
A. Role, Scope of Practice, and General Duties of the Pharmacy Technician	11
1. Differentiate between tasks that may be performed by a pharmacy technician and those that must be performed by a pharmacist. *Supporting Knowledge:* a. Role of the pharmacy technician b. Role of the pharmacist (for example: verification of prescriptions, requirements for counseling) c. Scope of pharmacy technician practice d. Pharmacy operations and process flow e. Pharmacy practice settings (for example: community, institutional, in-patient, long-term care, compounding)	
2. Maintain pharmacy security (for example: secure medications, prevent unauthorized access). *Supporting Knowledge* a. Pharmacy security measures (for example: sign off, barriers) b. Authorized personnel (including law enforcement), access to pharmacy areas, identification requirements, level of supervision	
3. Assist pharmacist in medication reconciliation. *Supporting Knowledge* a. Purpose and benefits of medication reconciliation and pharmacy technician's role in medication reconciliation b. Medical terminology (for example, pharmacy abbreviations, prefixes, suffixes, root words, combining vowels) c. Communication methods and strategies (for example, interviewing techniques, non-verbal cues, communication styles)	
4. Assist pharmacist in medication therapy management. *Supporting Knowledge* a. Purpose and benefits of medication therapy management (MTM) and pharmacy technician's role in MTM b. Medical terminology (for example: pharmacy abbreviations, prefixes, suffixes, root words, combining vowels) c. Communication methods and strategies (for example: interviewing techniques, nonverbal cues, communication styles)	
5. Assist patient in selecting compliance aids and devices. *Supporting Knowledge*	

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'+' Indicates content areas that might require calculations

a. Benefits of compliance aids and devices (for example: lockboxes, timers, personalized automatic dispensing devices)
b. Communication methods and strategies (for example: interviewing techniques, nonverbal cues, communication styles)

6. Interpret basic medical terminology commonly used in the pharmacy.

Supporting Knowledge

a. Medical terminology (for example: pharmacy abbreviations, prefixes, suffixes, root words, combining vowels)

7. Tailor communications to different audiences, including patients, caregivers, staff, and health care professionals.

Supporting Knowledge

a. Communication methods and strategies (for example: interviewing techniques, nonverbal cues, communication styles)

8. Interact with customers and patients in a professional manner, including internal and external customers.

Supporting Knowledge

a. Communication methods and strategies (for example: interviewing techniques, nonverbal cues, communication styles)

9. Confirm final product verification has been completed by pharmacist prior to release to patient.

Supporting Knowledge

a. Role of the pharmacy technician
b. Role of the pharmacist (for example: verification of prescriptions, requirements for counseling)

10. Assist the pharmacist in managing inventory by placing, receiving, verifying, rotating, and stocking orders. +

Supporting Knowledge

a. Pharmacy operations and process flow
b. Components of drug pricing
c. Ordering and inventory management methods (for example: PAR levels, just in time ordering, rotating inventory, fast movers)

11. Store medications following manufacturers' requirements (for example: light, temperature, humidity).

Supporting Knowledge

a. Pharmacy operations and process flow
b. Storage requirements for medications

12. Identify and remove expired products in a pharmacy's inventory. +

Supporting Knowledge

a. Pharmacy operations and process flow
b. Ordering and inventory management methods (for example: PAR levels, just in time ordering, rotating inventory, fast movers)

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13. Identify and remove recalled products from inventory. + *Supporting Knowledge* a. Pharmacy operations and process flow b. Classes of recalls and required actions c. Ordering and inventory management methods (for example: PAR levels, just in time ordering, rotating inventory, fast movers) d. Disposal methods	
14. Dispose of medications based on product-specific requirements. *Supporting Knowledge* a. Pharmacy operations and process flow b. Disposal methods c. Material Safety Data Sheets (MSDS)/Safety Data Sheets (SDS)	
15. Access and use references and resources as needed to perform job duties. *Supporting Knowledge* a. USP Standards b. Orange Book c. Red Book d. Clinical information sources (for example: Drug Facts and Comparisons, Micromedex, Lexicomp, Up to Date) e. Ident-a-drug f. Handbook on Injectables g. State Board of Pharmacy regulations h. Poison Control Centers	
B. Laws and Regulations	**8**
1. Comply with federal laws and regulations applicable to pharmacy practice. *Supporting Knowledge* a. Health Insurance Portability and Accountability Act (HIPAA) b. Combat Methamphetamine Epidemic Act of 2005 (CMEA) c. Drug Listing Act of 1972 (including elements of the NDC) d. Food and Drug Act of 1906 e. Omnibus Budget Reconciliation Act of 1990 (OBRA 90) f. Durham-Humphrey Amendment g. Food, Drug, and Cosmetic Act h. Drug Supply Chain Security Act (DSCSA) a.k.a. Track and Trace	

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i. Laws related to bioequivalence
j. Poison Prevention Packaging Act (PPPA)
k. Kefauver-Harris Amendment
l. Orphan Drug Act
m. Medicare Modernization Act
n. Centers for Medicare and Medicaid Services (CMS)
o. Anabolic Steroid Act
p. Safe handling and disposal practices for hazardous drugs (USP <800>)
q. Laws related to non-controlled substances when handling refills and/or partial filling of prescriptions

2. Maintain HIPAA compliance while communicating and disclosing information with patients, caregivers, health care professionals, and others.

Supporting Knowledge

a. Health Insurance Portability and Accountability Act (HIPAA)

3. Comply with HIPAA requirements regarding collection, storage, and disposal of patient information.

Supporting Knowledge

a. Health Insurance Portability and Accountability Act (HIPAA)

4. When filling prescriptions or medication orders, comply with applicable laws and regulations.

Supporting Knowledge

a. Health Insurance Portability and Accountability Act (HIPAA)
b. Combat Methamphetamine Epidemic Act of 2005 (CMEA)
c. Drug Listing Act of 1972 (including elements of the NDC)
d. Food and Drug Act of 1906
e. Omnibus Budget Reconciliation Act of 1990 (OBRA 90)
f. Durham-Humphrey Amendment
g. Food, Drug, and Cosmetic Act
h. Laws related to bioequivalence
i. Poison Prevention Packaging Act (PPPA)
j. Medicare Modernization Act
k. Centers for Medicare and Medicaid Services (CMS)
l. Anabolic Steroid Act
m. Safe handling and disposal practices for hazardous drugs (USP <800>)
n. Laws related to non-controlled substances when handling refills and/or partial filling of prescriptions
o. Organizations/regulators related to pharmacy practice (for example: OSHA, The Joint Commission, FDA)

5. Follow laws and regulations for non-controlled substances when handling refills and/or partial filling of prescriptions.

Supporting Knowledge

a. Health Insurance Portability and Accountability Act (HIPAA)

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b. Combat Methamphetamine Epidemic Act of 2005 (CMEA)
c. Drug Listing Act of 1972 (including elements of the NDC)
d. Food and Drug Act of 1906
e. Omnibus Budget Reconciliation Act of 1990 (OBRA 90)
f. Durham-Humphrey Amendment
g. Food, Drug, and Cosmetic Act
h. Laws related to bioequivalence
i. Poison Prevention Packaging Act (PPPA)
j. Medicare Modernization Act
k. Centers for Medicare and Medicaid Services (CMS)
l. Anabolic Steroid Act
m. Safe handling and disposal practices for hazardous drugs (USP <800>)
n. Laws related to non-controlled substances when handling refills and/or partial filling of prescriptions
o. Organizations/regulators related to pharmacy practice (for example: OSHA, The Joint Commission, FDA)

6. Package prescription medications in child-resistant containers or other approved containers as required.

Supporting Knowledge

a. Food, Drug, and Cosmetic Act
b. Poison Prevention Packaging Act (PPPA)

7. Comply with OSHA regulations for disposal of sharps.

Supporting Knowledge

a. Organizations/regulators related to pharmacy practice (for example: OSHA, The Joint Commission, FDA)

8. Comply with laws related to monitoring and reporting fraud, waste, and abuse.

Supporting Knowledge

a. Combat Methamphetamine Epidemic Act of 2005 (CMEA)
b. Drug Supply Chain Security Act (DSCSA) a.k.a. Track and Trace
c. Medicare Modernization Act
d. Centers for Medicare and Medicaid Services (CMS)
e. Anabolic Steroid Act
f. Organizations/regulators related to pharmacy practice (for example: OSHA, The Joint Commission, FDA)

9. Follow record-keeping and retention procedures per federal requirements.

Supporting Knowledge

a. Health Insurance Portability and Accountability Act (HIPAA)
b. Combat Methamphetamine Epidemic Act of 2005 (CMEA)
c. Drug Listing Act of 1972 (including elements of the NDC)
d. Food and Drug Act of 1906
e. Omnibus Budget Reconciliation Act of 1990 (OBRA 90)

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f. Durham-Humphrey Amendment
g. Food, Drug, and Cosmetic Act
h. Drug Supply Chain Security Act (DSCSA) a.k.a. Track and Trace
i. Laws related to bioequivalence
j. Poison Prevention Packaging Act (PPPA)
k. Kefauver-Harris Amendment
l. Orphan Drug Act
m. Medicare Modernization Act
n Centers for Medicare and Medicaid Services (CMS)
o. Anabolic Steroid Act
p. Safe handling and disposal practices for hazardous drugs (USP <800>)
q. Laws related to non-controlled substances when handling refills and/or partial filling of prescriptions
r. Organizations/regulators related to pharmacy practice (for example: OSHA, The Joint Commission, FDA)

C. Controlled Substances	6

1. Differentiate among the controlled substances schedules and the drugs within them. +

Supporting Knowledge

a. Controlled Substances Act (CSA)
b. Drug Enforcement Administration (DEA) for controlled substances
c. Schedules of controlled substances and drugs within them
d. Exempt narcotics
e. Prescription requirements for controlled substances
f. Elements of and formula for DEA number
g. DEA forms (for example: 41, 106, 222)
h. Procedures for ordering, receiving, storing, and disposing of controlled substances

2. Identify elements needed to verify the validity of DEA number. +

Supporting Knowledge

a. Elements of and formula for DEA number

3. Verify, on intake, required information is on prescription for controlled substance. +

Supporting Knowledge

a. Controlled Substances Act (CSA)
b. Schedules of controlled substances and drugs within them
c. Prescription requirements for controlled substances
d. Elements of and formula for DEA number
e. Expiration dates and refills for controlled substances
f. Laws, regulations, and processes to transfer controlled substances between pharmacies
g. Laws, regulations, and processes to transfer prescriptions for controlled substances between pharmacies

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h. Diversion and prescription monitoring programs

4. Comply with laws and regulations when filling, partial filling, and refilling prescriptions for controlled substances. +

Supporting Knowledge

a. Controlled Substances Act (CSA)
b. Schedules of controlled substances and drugs within them
c. Prescription requirements for controlled substances
d. Elements of and formula for DEA number
e. Expiration dates and refills for controlled substances
f. Emergency filling procedures
g. Laws, regulations, and processes to transfer controlled substances between pharmacies
h. Laws, regulations, and processes to transfer prescriptions for controlled substances between pharmacies
i. Tracking requirements for perpetual inventory of controlled substances
j. Diversion and prescription monitoring programs

5. File all classes of prescriptions appropriately.

Supporting Knowledge

a. Controlled Substances Act (CSA)
b. Drug Enforcement Administration (DEA) for controlled substances
c. Filing requirements

6. Comply with federal laws pertaining to the handling of Schedule V (exempt narcotics) and regulated (BTC) non-prescription products.

Supporting Knowledge

a. Controlled Substances Act (CSA)
b. Drug Enforcement Administration (DEA) for controlled substances
c. Schedules of controlled substances and drugs within them
d. Exempt narcotics
e. Filing requirements
f. Laws, regulations, and processes to transfer controlled substances between pharmacies
g. Laws, regulations, and processes to transfer prescriptions for controlled substances between pharmacies
h. Procedures for ordering, receiving, storing, and disposing of controlled substances
i. Tracking requirements for perpetual inventory of controlled substances
j. Diversion and prescription monitoring programs

7. Order, store, and maintain inventory of controlled substances in accordance with CSA.

Supporting Knowledge

a. Controlled Substances Act (CSA)
b. Drug Enforcement Administration (DEA) for controlled substances

c. DEA forms (for example: 41, 106, 222)
d. Procedures for ordering, receiving, storing, and disposing of controlled substances
e. Tracking requirements for perpetual inventory of controlled substances
f. Diversion and prescription monitoring programs

Domain 2: Drugs and Drug Therapy	15
A. Drug Classification	9
1. **Differentiate among therapeutic classes of drugs.** *Supporting Knowledge* a. Drug classes (for example: analgesics, dermatologics) b. Drug class abbreviations (for example: NSAID, SSRI, ARB, ACE)	
2. **Differentiate among various dosage forms.** *Supporting Knowledge* a. Dosage forms (for example: tablets, capsules, ointments, creams, controlled-release, immediate-release, elixir, suspension)	
3. **Differentiate among various routes of administration.** *Supporting Knowledge* a. Routes of administration (for example: topical, parenteral, oral)	
4. **Match common prescription/legend medications with their indications.** *Supporting Knowledge* a. Indications for frequently prescribed medications b. Basic body systems and disease states c. Prescription/legend medications and their indications	
5. **Match common over-the-counter (OTC) products with their indications.** *Supporting Knowledge* a. Basic body systems and disease states b. Over-the-counter (OTC) medications and their indications	
6. **Match common behind-the-counter (BTC) products with their indications.** *Supporting Knowledge* a. Basic body systems and disease states b. Behind-the-counter (BTC) medications and their indications	
B. Frequently Prescribed Medications	6
1. **Match brand and generic names of commonly used prescription medications.** *Supporting Knowledge*	

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'+' Indicates content areas that might require calculations

a. Drug Topics Top 200 medications (by prescription volume per year)
b. Brand and generic medication names
c. Therapeutic equivalence

2. Differentiate between side effects and adverse drug reactions.

Supporting Knowledge

a. Effects and side-effects of pharmacotherapy

3. Differentiate between contraindications and drug interactions.

Supporting Knowledge

a. Drug interactions (for example: drug-drug, drug-food, drug-OTC)

4. Recognize physical interactions and incompatibilities in the preparation of compounded and parenteral medications.

Supporting Knowledge

a. Physical interactions and incompatibilities

5. Recognize common vaccines and immunization schedules.

Supporting Knowledge

a. Vaccine and immunization schedules

Domain 3: Dispensing Process	45
A. Prescription and Medication Order Intake and Entry	15

1. Analyze a prescription or medication order for completeness and obtain missing information.

Supporting Knowledge

a. Required components of a prescription
b. Types/formats of prescription/medication orders (for example: telephone, facsimile, electronic prescription orders, computerized physician order entry)
c. Providers with prescribing authority (what types of providers can prescribe what types of medications)
d. Allowable refills based on prescription drug type and drug class
e. National Provider Identifier (NPI)
f. Purpose and use of SIG codes/pharmacy abbreviations
g. Institute for Safe Medication Practices error-prone abbreviations list
h. DAW codes and their uses

2. Process prescription orders (for example: telephone, facsimile, and electronic).

Supporting Knowledge

a. Required components of a prescription
b. Types/formats of prescription/medication orders (for example: telephone, facsimile, electronic prescription orders, computerized physician order entry)
c. Providers with prescribing authority (what types of providers can prescribe what types of medications)

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d. Allowable refills based on prescription drug type and drug class
e. Components of a patient profile
f. National Provider Identifier (NPI)
g. Purpose and use of SIG codes/pharmacy abbreviations
h. Institute for Safe Medication Practices error-prone abbreviations list
i. DAW codes and their uses
j. Appropriate responses to electronic alerts
k. Components required to process a third-party claim (for example: BIN, PCN, prescription group code, person code)
l. Coordination of benefits
m. Types of formularies
n. Types of third-party rejections (for example: duplicate therapy, high dose, prior authorization, missing diagnosis code)
o. Tiered copays
p. Types of coverage (for example: Medicare, Medicaid, workers' compensation, HMO, patient assistance programs)
q. Drug utilization reviews/Drug utilization evaluations

3. Process prescription refill authorization requests from prescribers.

Supporting Knowledge

a. Providers with prescribing authority (what types of providers can prescribe what types of medications)
b. Allowable refills based on prescription drug type and drug class

4. Obtain information for the patient profile from patients, such as demographics, medication history (including OTCs and herbal supplements), health conditions, concurrent medications, allergies, and third-party payers.

Supporting Knowledge

a. Components of a patient profile
b. Components required to process a third-party claim (for example: BIN, PCN, prescription group code, person code)
c. Types of coverage (for example: Medicare, Medicaid, workers' compensation, HMO, patient assistance programs)

5. Enter and maintain electronic patient profiles.

Supporting Knowledge

a. Components of a patient profile
b. Components required to process a third-party claim (for example: BIN, PCN, prescription group code, person code)
c. Types of coverage (for example: Medicare, Medicaid, workers' compensation, HMO, patient assistance programs)

6. Identify and input third-party payer identifier numbers.

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Supporting Knowledge

a. Components required to process a third-party claim (for example: BIN, PCN, prescription group code, person code)
b. Coordination of benefits
c. Types of coverage (for example: Medicare, Medicaid, workers' compensation, HMO, patient assistance programs)

7. Process third-party prescriptions (for example: coordination of benefits, rejections, copays, prior authorizations).

Supporting Knowledge

a. DAW codes and their uses
b. Appropriate responses to electronic alerts
c. Components required to process a third-party claim (for example: BIN, PCN, prescription group code, person code)
d. Coordination of benefits
e. Types of formularies
f. Types of third-party rejections (for example: duplicate therapy, high dose, prior authorization, missing diagnosis code)
g. Tiered copays
h. Types of coverage (for example: Medicare, Medicaid, workers' compensation, HMO, patient assistance programs)

8. Communicate with patients, providers, and/or third-party payers about prescription coverage.

Supporting Knowledge

a. Appropriate responses to electronic alerts
b. Components required to process a third-party claim (for example: BIN, PCN, prescription group code, person code)
c. Coordination of benefits
d. Types of formularies
e. Types of third-party rejections (for example: duplicate therapy, high dose, prior authorization, missing diagnosis code)
f. Tiered copays
g. Types of coverage (for example: Medicare, Medicaid, workers' compensation, HMO, patient assistance programs)
h. Drug utilization reviews/Drug utilization evaluations

9. Translate prescriber's directions for use into accurate and complete directions for the patient.

Supporting Knowledge

a. Types/formats of prescription/medication orders (for example: telephone, facsimile, electronic prescription orders, computerized physician order entry)
b. Allowable refills based on prescription drug type and drug class
c. Purpose and use of SIG codes/pharmacy abbreviations
d. Institute for Safe Medication Practices error-prone abbreviations list

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e. DAW codes and their uses	
10. Interpret abbreviations used on prescriptions or medication orders. *Supporting Knowledge* a. Purpose and use of SIG codes/pharmacy abbreviations b. Institute for Safe Medication Practices error-prone abbreviations list	
11. Enter prescription information into the computer. *Supporting Knowledge* a. Required components of a prescription b. Types/formats of prescription/medication orders (for example: telephone, facsimile, electronic prescription orders, computerized physician order entry) c. Providers with prescribing authority (what types of providers can prescribe what types of medications) d. Allowable refills based on prescription drug type and drug class e. National Provider Identifier (NPI) f. Purpose and use of SIG codes/pharmacy abbreviations g. Institute for Safe Medication Practices error-prone abbreviations list h. DAW codes and their uses	
12. Use correct DAW codes when entering prescription data into the computer. *Supporting Knowledge* a. DAW codes and their uses	

13. Respond to electronic alerts (for example: compliance, interaction, third-party payers) while processing a prescription. *Supporting Knowledge* a. Appropriate responses to electronic alerts b. Types of third-party rejections (for example: duplicate therapy, high dose, prior authorization, missing diagnosis code) c. Drug utilization reviews/Drug utilization evaluations	
14. Process Durable Medical Equipment (DME) prescriptions, including coordination of benefits with Medicare Part B or D. *Supporting Knowledge* a. Coordination of benefits b. Types of coverage (for example: Medicare, Medicaid, workers' compensation, HMO, patient assistance programs) c. Durable medical equipment	
B. Preparing and Dispensing Prescriptions	**13**
1. Identify medications that require special handling procedures. *Supporting Knowledge* a. When to keep medication in original packaging b. Purpose of Risk Evaluation Mitigation Strategies (REMS) program c. Considerations for handling hazardous drugs (USP <800>)	

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2. Stock and use automated dispensing machines. *Supporting Knowledge* a. Role and benefits of automated dispensing systems in the pharmacy
3. Select appropriate medication product based on prescription/legend, OTC, or BTC status; name and strength; NDC number; expiration date; and lot number. *Supporting Knowledge* a. Components of an NDC number b. Distinction between prescription/legend, over-the-counter, and behind-the-counter medications c. Federal restrictions on shipping of specific medications and supplies (for example: diabetic testing supplies, controlled substances) d. Components of an OTC label
4. Count/measure or pour medication into appropriate container. *Supporting Knowledge* a. When to keep medication in original packaging b. Considerations for handling hazardous drugs (USP <800>)
5. Select appropriate prescription vials, caps, bottles, and other supplies. + *Supporting Knowledge* a. Poison Prevention Packaging Act (PPPA) b. Measurement systems (for example, metric, household, roman numerals, military time)

6. Label medication products packaged in approved containers or, when appropriate, in original packages. *Supporting Knowledge* a. When to keep medication in original packaging b. Components of a patient prescription label c. Label placement d. Purpose of auxiliary labels e. Labels appropriate to different types and classes of drugs
7. Select and apply appropriate auxiliary labels. *Supporting Knowledge* a. Purpose of auxiliary labels b. Labels appropriate to different types and classes of drugs
8. Provide printed patient information leaflets and required medication guides. *Supporting Knowledge* a. Purpose of Risk Evaluation Mitigation Strategies (REMS) program b. Prescriptions that require federal medication guides c. Difference between medication guides and product package inserts
9. Package and ship medications according to manufacturers' recommendations.

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Supporting Knowledge a. Federal restrictions on shipping of specific medications and supplies (for example: diabetic testing supplies, controlled substances)	
10. Select appropriate OTC product based on pharmacist recommendation. *Supporting Knowledge* a. Distinction between prescription/legend, over-the-counter, and behind-the-counter medications b. Vitamins, minerals, and herbal supplements c. Components of an OTC label	
11. Offer pharmacist consultation to patients. *Supporting Knowledge* a. Omnibus Budget Reconciliation Act of 1990 (OBRA 90)	
12. Identify prescriptions that have been forged, copied or possibly altered. *Supporting Knowledge* a. Security features of prescriptions	
C. Calculations	7
1. Convert within and between each of the systems of measurement. + *Supporting Knowledge* a. Measurement systems (for example: metric, household, roman numerals, military time) b. Basic algebra	
2. Calculate the quantities of prescriptions or medication orders to be dispensed. + *Supporting Knowledge* a. Measurement systems (for example: metric, household, Roman numerals, military time) b. Basic algebra c. mEq d. Units e. Body surface area (BSA) f. Pediatric dosage calculations (for example: Young's rule, Clark's rule, Fried's rule) g. mg/kg/day h. Ratio strength i. w/w%, w/v%, v/v% j. Dilution/concentration k. Intravenous flow rate (for example: mL/hr) l. Alligation	
3. Calculate the days' supply for prescriptions. +	

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Supporting Knowledge

a. Basic algebra

4. Calculate individual and total daily dosages. +

Supporting Knowledge

a. Basic algebra
b. mEq
c. Units
d. Body surface area (BSA)
e. Pediatric dosage calculations (for example: Young's rule, Clark's rule, Fried's rule)
f. mg/kg/day
g. Intravenous flow rate (for example: mL/hr)

5. Perform sterile and nonsterile compounding calculations. +

Supporting Knowledge

a. Measurement systems (for example: metric, household, Roman numerals, military time)
b. Basic algebra
c. Ratio strength
d. w/w%, w/v%, v/v%
e. Dilution/concentration
f. Intravenous flow rate (for example: mL/hr)
g. Alligation

6. Perform basic pharmacy business calculations (for example: pricing and inventory control). +

Supporting Knowledge

a. Basic algebra
b. Types of business calculations (for example: markup, percentage markup, profit, gross and net profit, cost, overhead, turnover rate)

7. Perform temperature conversions. +

Supporting Knowledge

a. Basic algebra
b. Temperature scales

8. Calculate percentages. +

Supporting Knowledge

a. Basic algebra
b. Ratio strength
c. w/w%, w/v%, v/v%
d. Dilution/concentration

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D. Sterile and Nonsterile Products, Compounding, Unit Dose, and Repackaging	10
1. Use Universal Precautions. *Supporting Knowledge* a. CDC/OSHA Universal Precautions Guidelines	
2. Employ infection control, including handwashing and personal protective equipment (PPE). *Supporting Knowledge* a. Infection control (USP <795> and <797>)	
3. Follow correct procedures for maintaining the environment for the sterile product compounding area. *Supporting Knowledge* a. Infection control (USP <795> and <797>) b. Maintaining sterile environment (USP <797>)	
4. Select appropriate equipment and supplies. + *Supporting Knowledge* a. Needle gauges and types (for example: regular, filter, insulin) b. Types of syringes c. Diluents and base products	
5. Perform compounding process for sterile products following aseptic technique. + *Supporting Knowledge* a. Compounding sterile products following aseptic technique (USP <797>) b. Primary engineering controls (for example: laminar versus vertical flow hood, compounding aseptic isolators versus compounding aseptic containment isolators) (USP <797>)	
6. Performing compounding process for non-sterile products. + *Supporting Knowledge* a. Compounding nonsterile products (USP <795>)	
7. Select appropriate diluent or base product based on manufacturer's recommendation. + *Supporting Knowledge* a. Diluents and base products b. Sources of information (for example: product package insert, electronic resources, Trissel's Handbook of Injectable Drugs)	
8. Determine beyond-use dates based on published data or regulatory agency requirements for both compounded and repackaged products. *Supporting Knowledge* a. Sources of information (for example: product package insert, electronic resources, Trissel's Handbook of Injectable Drugs) b. Labeling (USP <795> and <797>)	

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c. Methods of determining beyond-use date
9. Inspect final product for physical incompatibilities. *Supporting Knowledge* a. Forms of incompatibility (for example: physical, chemical, osmolarity)
10. Label compounded products. *Supporting Knowledge* a. Labeling (USP <795> and <797>) b. Components of a unit dose label
11. Repackage and label unit dose products. *Supporting Knowledge* a. Labeling (USP <795> and <797>) b. Components of a unit dose label
12. Maintain sterile and nonsterile compounding and repackaging equipment. + *Supporting Knowledge* a. Compounding sterile products following aseptic technique (USP <797>) b. Equipment maintenance (USP <795> and <797>) c. Manufacturers' guidelines for maintaining repackaging equipment d. Primary engineering controls (for example: laminar versus vertical flow hood, compounding aseptic isolators versus compounding aseptic containment isolators) (USP <797>)
13. Complete required documentation for sterile, nonsterile, and repackaged products. *Supporting Knowledge* a. Documentation requirements (USP <795> and <797>)

Domain 4: Medication Safety and Quality Assurance	15
A. Follow best practices for quality assurance and medication safety. + *Supporting Knowledge* a. Best practices for quality assurance during entire filling process b. Safe dosage ranges c. Institute for Safe Medication Practices (ISMP) Guidelines, including considerations for error-prone drugs d. Black box warnings e. Adverse drug events, including adverse drug reactions (ADEs and ADRs) f. MedWatch g. FDA Adverse Event Reporting System (FAERS)	

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h. Vaccine Adverse Event Reporting System (VAERS)
i. Risk Evaluation Mitigation Strategies (REMS)
j. Pregnancy and lactation warnings

B. Assist pharmacist in identifying patient medication adherence issues.

Supporting Knowledge

a. Medication adherence
b. Health literacy (patients' knowledge of medications and usage)

C. Use safety strategies to prevent mix ups between look-alike, sound-alike products, errors with high alert/high risk medications, and medications with different routes of administration.

Supporting Knowledge

a. Institute for Safe Medication Practices (ISMP) Guidelines, including considerations for error-prone drugs
b. Look-alike/sound-alike drugs
c. Tall Man lettering
d. High-alert/high-risk medications
e. Error-prone medications
f. Error-prone abbreviations

D. Match patient information to prescription or medication order.

Supporting Knowledge

a. Best practices for quality assurance during entire filling process

E. Follow procedures to assure delivery of the correct prescriptions to patients.

Supporting Knowledge

a. Best practices for quality assurance during entire filling process

F. Take corrective action after detecting potential medication errors or near misses.

Supporting Knowledge

a. Record-keeping requirements related to medication errors and near misses
b. Continuous quality improvement
c. Root cause analysis

G. Maintain a clean work environment in the drug dispensing and patient care areas.

Supporting Knowledge

a. Best practices for quality assurance during entire filling process
b. Procedures to avoid cross-contamination
c. Sanitization processes

H. Perform quality assurance checks of floor stock (for example: credits, unsecured medication, expired or outdated medications, emergency medications).

Supporting Knowledge

* Test Plan based on results of the Job Analysis Study completed in 2016
'+' Indicates content areas that might require calculations

a. Best practices for quality assurance during entire filling process
b. Continuous quality improvement

* Test Plan based on results of the Job Analysis Study completed in 2016
'+' Indicates content areas that might require calculations