Instructional Framework

Pharmacy Support Services

51.0805.00

This Instructional Framework identifies, explains, and expands the content of the standards/measurement criteria, and, as well, guides the development of multiple-choice items for the Technical Skills Assessment. This document corresponds with the Technical Standards endorsed on May 19, 2021.

Domain 1: Medications and Pharmacology **Instructional Time: 30 - 35%**	
STANDARD 1.0 DEMONSTRATE THE APPLICATION OF MEDICATIONS	
1.1 Identify the top 200 drugs and match them to indications	● Examples ○ Cialis - erectile dysfunction ○ Imdur - angina ○ Amlodipine - hypertension ○ Sertraline - antidepressant ○ Metoclopramide - antiemetic (nausea)
1.2 Differentiate between generic (trade) names and brand names of medications	● Generic (trade) names vs. Brand names ● Examples ○ escitalopram - Lexapro ○ alprazolam - Xanax ○ lisinopril - Prinivil ○ omeprazole - Prilosec ○ furosemide - Lasix ○ atenolol - Tenormin ○ clarithromycin - Biaxin ○ glimepiride - Amaryl
1.3 Identify common categories of drugs and naming stems that enable identification of the category	● Naming stems ● Examples [generic; (classification/indication)] ○ Lisinopril; Ramipril; Benazepril (ACE inhibitors/Hypertension) ○ Cephalexin; Cefdinir; Ceftriaxone (Cephalosporin/ABX) ○ Clotrimazole; fluconazole; ketoconazole (antifungals) ○ Amoxicillin = penicillin (antibiotic) ○ Omeprazole = (proton pump inhibitor/GERD) ○ Atenolol = (beta blocker/hypertension)

1.4 Identify the five classifications of controlled substances	● Schedule I ● Schedule II ● Schedule III ● Schedule IV ● Schedule V
1.5 Distinguish among the five categories or schedules of drugs	● Schedule examples: ○ Schedule I (Heroin; Marijuana; LSD) ○ Schedule II (Morphine; Oxycodone; Fentanyl) ○ Schedule III (Tylenol with codeine) ○ Schedule IV (Alprazolam; diazepam) ○ Schedule V (Promethazine with codeine; and homatropine)
1.6 Interpret major symbols, abbreviations, and medical terminology used on prescriptions	● Symbols ● Examples: ○ ° = hour ○ ↑ = increase ○ ↓ = decrease ● Abbreviations ● Examples ○ Ou = both eyes ○ po = by mouth ○ ac = before meals ○ bid - twice a day ○ prn - as needed ○ npo - nothing by mouth ○ abx - antibiotics ○ htn - hypertension
1.7 Identify narrow therapeutic index medications (i.e., antiseizure, synthroid, anticoagulants, etc.)	● Narrow therapeutic index medications ○ Antiseizure ex. Carbamazepine ○ Anticoagulants ex. Warfarin ○ Thyroid ex. Synthroid
1.8 Differentiate among various dosages forms (i.e., tablets, capsules, ointments, creams, elixir, suspension, controlled-release, immediate-release, etc.)	● Tablets ● Capsules ● Ointments ● Creams ● Elixir ● Suspension

	● Controlled-release ● Immediate-release
1.9 Differentiate among various routes of administration (i.e., topical, parenteral, oral, etc.)	● Topical ● Parenteral ● Oral (Enteral)
1.10 Recognize types and uses of available reference books (e.g., orange, facts and comparisons, physicians desk reference, and red)	● Orange book ● Facts and comparisons ● Physicians desk reference ● Red book
STANDARD 4.0 DEMONSTRATE THE BASICS OF PHARMACOLOGY PRESCRIPTION AND NONPRESCRIPTION MEDICATIONS	
4.1 Differentiate between contraindications and drug interactions (i.e., drug-drug, drug-food, drug-OTC, pregnancy, breastfeeding, allergies, etc.)	● Contraindications ○ Pregnancy ○ Breastfeeding ○ Allergies ● Drug interactions ○ Drug - drug (aspirin/warfarin) ○ Drug - food (warfarin/green, leafy veggies; statins/grapefruit; tyramine/MAOIs) ○ Drug - OTC (aspirin/St. John's wort)
4.2 Differentiate between side effects and adverse drug reactions (e.g., rash, hives, light headedness, vomiting, migraine, addiction, miscarriage, bleeding, deafness, and depression)	● Side effects ○ Rash ○ Hives ○ Nausea/vomiting ○ Migraine/headache ○ Light headedness ○ Diarrhea ● Adverse drug reactions ○ Addiction ○ Miscarriage ○ Bleeding ○ Deafness/hearing loss ○ Depression
4.3 Identify common over-the-counter, behind-the-counter, and dietary supplements/vitamins and their indications	● Over-the-counter ○ Advil = pain/inflammation ○ Tylenol = pain/fever

	○ Benadryl = allergies ● Behind-the-counter ○ Pseudoephedrine ● Dietary supplements/vitamins ○ Importance and indication ○ Vitamin D (bone health) ○ Vitamin K (coagulation) ○ Water and fat soluble
4.4 Explain the role of the body system with medications and how they relate to absorption, distribution, metabolism, and excretion with medication	● Pharmacokinetics ○ Absorption = relates to route of administration ○ Distribution = bloodstream ○ Metabolism = enzymes from liver ○ Excretion = mostly through kidney
4.5 Differentiate among therapeutic classes of drugs (i.e., analgesics, antipyretics, etc.)	● Therapeutic classes of drugs ● Analgesics ● Antipyretics ○ Antiemetics
4.6 Recognize common vaccines and immunization schedules (e.g., storage and common use)	● Common vaccines ○ MMR, Shingles, COVID, Influenza ○ Storage (Refrigerator vs. Freezer) ○ Vaccines covered under Medicare Part D ● Immunization schedules ○ MMR, Shingles, COVID, Influenza, Prevenar 13

Domain 2: Order Entry and Processing **Instructional Time: 25 - 35%**	
STANDARD 7.0 APPLY PROCEDURES FOR RECEIVING AND PROCESSING PRESCRIPTIONS AND REFILLS	
7.1 Prepare medications within the scope of practice as documented in the Arizona Board of Pharmacy laws and regulations	● Prepare medications within the scope of practice ○ Final verification completed by pharmacist
7.2 Identify the elements needed on a prescription (e.g., date of issue; patient's name and address; clinician name, address, and DEA number; drug name; drug strength; dosage form; quantity	● Elements needed on a prescription ○ Date of issue ○ Patient's name and address ○ Clinician name, address, and DEA number

prescribed; directions for use; number of refills; and signature of prescriber)	○ Drug name ○ Drug strength ○ Dosage form ○ Quantity prescribed ○ Directions for use ○ Number of refills ○ Signature of prescriber
7.3 Analyze prescriptions or medication orders for completeness, accuracy, authenticity, legality, and reimbursement eligibility	● Analyze prescriptions or medication orders ○ Complete ○ Accurate ○ Authentic ○ Legal ○ Reimbursement eligibility ● Example: DAW codes = DAW 1 prescriber requests brand
7.4 Demonstrate database software used for entering, retrieving, and maintaining prescription and refill information (i.e., patient profile including special requests)	● Database software ○ Entering, retrieving, and maintaining prescription and refill information ● Patient profile including special requests ○ Safety/non-safety caps
7.5 Follow the established protocol for retrieving drugs from inventory and preparing medications	● Established protocol (3-point check, bar codes) ○ Retrieving drugs from inventory ○ Preparing medications
7.6 Calculate and measure medications using a manual or an automated system	● Calculate and measure medications ○ Automated - Kirby, Talyst ○ Manual - counting tray
7.7 Label drug products including auxiliary labels (e.g., poison, shake well before using, store away from direct sunlight, for external use only, and take on empty stomach)	● Auxiliary labels ● Examples: ○ Poison ○ Shake well before using ○ Store away from direct sunlight ○ For external use only ○ Take on empty stomach
7.8 Determine packaging requirements (e.g., types of bags, syringes, glass, PVC, child resistant, and light resistant)	● Packaging requirements ○ Types of bags ○ Syringes

	○ Glass ○ PVC ○ Child resistant ○ Light resistant
7.9 Follow the established protocol in dispensing and distributing drugs and medications (e.g., validation, documentation, and distribution)	● Established protocol in dispensing and distributing drugs and medications ○ Validation ○ Documentation ○ Distribution ▪ Unit dose ▪ Carts ▪ Vials
7.10 Identify situations when refills and renewals need to be reviewed by the pharmacist	● All medication needs to be reviewed by a pharmacist ● Refills ○ Change to directions, strength, etc.
7.11 Identify special requests on the prescription (i.e., safety/non-safety caps)	● Special requests ○ DAW 2 - patient requests brand ○ Safety/non-safety caps
STANDARD 8.0 PROVIDE CUSTOMER/PATIENT SERVICES AND COMMUNICATIONS	
8.1 Use effective strategies for greeting, servicing, and thanking all customers/patients including non-English speaking individuals and those with special needs (e.g., vision or hearing impairments, low reading level, and difficulty understanding instructions)	● Effective strategies ○ Greeting ○ Servicing ○ Thanking all customers/patients ● Non-English speaking individuals ○ Translation services/documents ● Vision or hearing impairments ○ Printed reading materials ● Low reading level ● Difficulty understanding instructions
8.2 Apply appropriate communication techniques for obtaining required health information (i.e., insurance, OTC meds and supplements, birth date and address verification, etc.)	● Appropriate communication techniques ● Required information for patient profile ○ Insurance ○ OTC meds and supplements ○ Birth date and address verification

8.3 Identify situations where showing empathy to customers/patients may be necessary	● Understanding customer service and how to greet patients ● Verbalizing appropriate emotions/empathy
8.4 Distinguish between retail versus hospital responsibilities and working conditions for the pharmacy technician	● Retail responsibilities and working conditions ● Hospital responsibilities and working conditions
STANDARD 9.0 APPLY PROCEDURES FOR INVENTORY CONTROL	
9.1 Explain the function and application of the national drug code (NDC) numbers, lot numbers, and expiration dates	● Function and application of the national drug code (NDC) ○ NDC = product identifier ○ Lot numbers - all different per batch of medication ○ Expiration dates - last day of the month ● NDC numbers 3 sets of numerical digits, this is a unique identifier for all drugs ○ First set of numbers are the manufacture identifier ○ Second set of numbers drug formulation ○ Third is the size and type of packaging
9.2 Follow established practices to place drug and device orders by phone and electronically	● Established practices to place drug and device orders ● Want book ● Barcode scanner (Telxon) ● Drug inventory reports
9.3 Follow established practices to receiving items	● Receiving items ○ Barcoding/NDC/lot numbers/expirations dates ○ Stock rotation (First in First Out - FIFO)
9.4 Follow established practices related to storage requirements (e.g., refrigeration, freezer, warmer, chemical stability, and lock up)	● Storage requirements ○ Refrigeration (temperatures checked and logged twice daily) ○ Temperature ranges (room, refrigeration, freezer) ○ Freezer ○ Warmer ○ Chemical stability ○ Lock up
9.5 Follow established practices related to remove items (e.g., recalls, returns, outdates, and reverse distribution)	● Removing items ○ Difference in recall levels - Class I, II, III ○ Returns ○ Outdates (2x2 window) ○ Reverse distribution

9.6 Explain the use of a barcoding system (e.g., improve accuracy, increase productivity, and control inventory)	● Barcoding system benefits ○ Improved accuracy ○ Increased productivity ○ Inventory control ○ Patient safety
9.7 Follow established practices to maintain a secure inventory to prevent theft by patients and staff	● Theft prevention practices ○ CII locked in safe (retail) ○ All controlled substances secure room (hospital) ○ Time-controlled release safe ○ Stock Rotation
STANDARD 10.0 APPLY PROCEDURES FOR BILLING AND INSURANCE	
10.1 Describe various reimbursement policies and plans [e.g., HMOs, PPOs, private plans, Medicare and Medicaid, and third-party reimbursement systems (i.e., PBM, medication assistance programs, coupons, self-pay, etc.)]	● Reimbursement policies and plans ○ HMOs ○ PPOs ○ Private plans ○ Medicare and Medicaid ○ Tricare ● Third-party reimbursement systems ○ PBM ○ Medication assistance programs ○ Coupons (GoodRX) ○ Self-pay (out-of-pocket) ● Co-pay ● Deductible
10.2 Identify and input components required to process a third-party claim (e.g., BIN, PCN, prescription group code, and person code)	● Components required to process a third-party claim ○ BIN ○ PCN ○ Prescription group code ○ Person code ● National Provider Identifier - transmits healthcare info from providers
10.3 Explain third-party resolution [e.g., Coordination of Benefits (COB), prior authorization, rejected claims, and plan limitations]	● Third-party resolution ○ Coordination of Benefits (COB) ○ Prior authorization - brands/expensive meds

	○ Rejected claims - terminated coverage/new coverage/refill too soon ○ Plan limitations - days supply; type of medication
10.4 Recognize the formulary or approved/preferred product list or system	● Understanding the drug formulary and why it is important ● Medications covered by insurance

Domain 3: Federal Medical and Legal Considerations **Instructional Time: 10 - 15%**	
STANDARD 2.0 IDENTIFY MEDICAL AND LEGAL CONSIDERATIONS RELATED TO PHARMACY	
2.1 Identify federal requirements for storage, handling, and disposal of nonhazardous, hazardous, and pharmaceutical substances and waste (e.g., eyewash, spill kits, sharps, and SDS)	● Nonhazardous, hazardous, and pharmaceutical substances and waste ○ Storage ○ Handling ○ Disposal ● Eyewash ● Spill kits ● Sharps ● SDS ● Specifically labeled containers
2.2 Explain federal guidelines for controlled substance schedules and requirements for prescriptions processing (i.e., new, refill, transfer, etc.)	● Federal Guidelines for Controlled substances ○ New ○ Refill ○ Transfer ● Examples: ○ CII - no refills/new RX each time ○ CIII - CV 5 refills in 6 months
2.3 Identify proper forms for controlled substances (i.e., receiving, storing, ordering, returning, labeling, dispensing, reverse distribution, take-back programs, destruction, loss/theft, etc.)	● Proper forms for controlled substances (CII) ○ Receiving ○ Storing ○ Ordering - DEA form 222 ○ Returning - DEA form 222 ○ Labeling ○ Dispensing ○ Reverse distribution

	○ Take-back programs ○ Destruction/expired - DEA form 41 ○ Loss/theft - DEA form 106
2.4 Identify the formula used to verify the validity of a prescriber's DEA number	● Process for DEA number validation ● A DEA number consists of a two-letter prefix followed by 7 digits ○ The first letter determines the type of practitioner ○ The second letter is the first letter of the last name of the provider ○ Add the first, third and fifth number together for a sum ○ Add the second, fourth and sixth digits together and double the answer for the sum ○ Add the two sums together ○ The last digit of the total sum will be the same number of the seventh digit in the DEA number.
2.5 Describe requirements for record keeping, documentation, and record retention (e.g., length of time prescriptions are maintained, repackaged products, recalled products and supplies, and invoices)	● Record keeping, documentation, and record retention ○ Length of time prescriptions are maintained ○ Controlled substances inventoried every 2 years ○ Repackaged products ○ Recalled products and supplies ○ Invoices
2.6 Discuss restricted drug programs and related prescription-processing requirements (e.g., FDA's REM Program, prior authorization, Medicare and Medicaid insurance restrictions, and drugs such as thalidomide, isotretinoin, pseudoephedrine, and clozapine with special requirements)	● Restricted drug programs ○ FDA's REM Program ○ Example Drugs ▪ Thalidomide ▪ Isotretinoin ▪ Pseudoephedrine ▪ Clozapine with special requirements ● Related prescription-processing requirements ○ Prior authorization ○ Medicare and Medicaid insurance restrictions
2.7 Identify professional standards related to data integrity, security, and confidentiality (e.g., HIPAA, backing up, and archiving records)	● Data integrity, security, and confidentiality ○ HIPAA ○ Backing up ○ Archiving records

2.8 Explain the requirement for patient consultations by a pharmacist according to OBRA	● Pharmacist patient consultations ○ Drug Utilization Review (DUR) - requires use/review of patient profiles ○ The Omnibus Budget Reconciliation Act of 1990 (OBRA)
2.9 Identify FDA recall process and requirements (e.g., medications, devices, supplies, supplements, and classifications)	● FDA recall process and requirements ○ Medications ○ Devices ○ Supplies ○ Supplements ○ Classifications ● 3 classes of a drug recall ○ Class 1: The use or exposure to the product will cause severe adverse reactions or death ○ Class 2: The use or exposure to the product may cause temporary or medically reversible adverse reactions. ○ Class 3: The use or exposure to the product is not likely to cause adverse reactions.
2.10 Explain the functions of the State Board of Pharmacy (SBOP) (e.g., registering pharmacists and students' developing standards, codes, and guidelines for the pharmacy profession; handling notifications, complaints, investigations, and disciplinary hearings)	● State Board of Pharmacy (SBOP) and its functions ○ Registering pharmacists and students' developing standards ○ Codes ○ Guidelines for the pharmacy profession ○ Handling notifications, complaints, investigations, and disciplinary hearings
2.11 Explain A.R.S.32-3208 as it applies to pharmacy technicians	● A.R.S.32-3208 ● Patient safety ● State Board of Pharmacy notification ○ Currently licensed ○ Applicant ○ License renewal
2.12 Distinguish the roles and responsibilities of pharmacists, pharmacy technicians, and other pharmacy employees according to the State Board of Pharmacy (SBOP)	● Roles and responsibilities/scope of practice ○ Pharmacists ○ Pharmacy technicians ○ Pharmacy employees
2.13 Discuss guidelines for when to follow state versus federal laws and regulations	● State versus federal laws and regulations ○ Always follow the stricter rule

2.14 Describe legal parameters related to the administration of emergency care by pharmacy technicians	● Legal parameters for the administration of emergency care by pharmacy technicians ● No scope
2.15 Recognize adverse drug-related emergencies and the appropriate first aid	● Recognize adverse drug-related emergencies ○ Example: shortness of breath ● Notify the pharmacist ● Call 911

Domain 4: Pharmaceutical Calculations **Instructional Time: 10 - 15%**	
STANDARD 3.0 DEMONSTRATE MEASUREMENT AND CALCULATING SKILLS	
3.1 Use Arabic and Roman numerals, weights, and measures, conversion in temperature, and universal and standard time	● Arabic and Roman numerals ○ I = 1 ○ V = 5 ○ X = 10 ○ L = 50 ○ C = 100 ○ D = 500 ○ M = 1000 ● Rules to Roman numerals ● Weights, and measures ○ Base units ○ Weight ○ Length ○ Volume ● Conversion in temperature ○ F = (1.8 x C) + 32 ● Universal and standard time ○ am/pm vs. 2400
3.2 Convert within and between each of the systems of measurement (i.e., metric, household, apothecary, etc.)	● Systems of measurement ○ Metric ○ Household ○ Apothecary

3.3 Calculate the quantities of prescriptions or medication orders to be dispensed (i.e., body surface area, ratio strengths, weight-volume, etc.)	● Quantities to be dispensed ● Techniques ○ Body surface area (mg per m2) ○ Ratio strengths ○ Weight-volume (w/w %, v/v%, w/v%) ○ Body weight (mg per kg)
3.4 Use complex mathematical calculations (e.g., powder volume formula, drip rates, allegations, ratio/proportion, and percentages)	● Complex mathematical calculations ○ Powder volume formula ○ Drip rates ○ Allegations ○ Ratio/proportion ○ Percentages
3.5 Calculate a day's supply for prescriptions	● Total amount dispensed/by amount daily
3.6 Calculate individual and total daily dosages	● Daily amount x time frame
3.7 Perform sterile and nonsterile compounding calculations (i.e., dilutions, concentrations, etc.)	● Sterile and nonsterile compounding calculations ○ Dilutions ○ Concentrations

Domain 5: Patient Safety and Quality Assurance **Instructional Time: 10 - 15%**	
STANDARD 5.0 RECOGNIZE STERILE AND NONSTERILE COMPOUNDING REQUIREMENTS	
5.1 Define pharmacy compounding terminology	● Pharmacy compounding terminology ○ Equipment ▪ Laminar Airflow Workbench ▪ Compounded Sterile Product ▪ Class A scale ○ Techniques ▪ Geometric dilution
5.2 Demonstrate infection control processes (e.g., hand washing, laminar air flow, clean room, PPE, and universal precautions)	● Infection control processes ○ Hand washing ○ Laminar air flow ○ Clean room

	○ PPE (gloves, mask, gown) ○ Universal precautions
5.3 Identify safety protocols in the handling and disposal requirements of all medications (e.g., receptacles and sharps containers)	● Handling and disposal requirements ○ Receptacles ○ Sharps containers
5.4 Use documentation for sterile, nonsterile, and repackages products	● Documentation for sterile, nonsterile, and repackages products ○ Master formula sheet ○ Logbooks ○ Beyond Use Date (BUD)
5.5 Determine physical and chemical incompatibilities related to nonsterile compounding and reconstitution (e.g., beyond use dating)	● Physical incompatibilities ○ Color ○ Precipitate ● Chemical incompatibilities ○ Testing required ● Beyond use dating
5.6 Identify the selection and use of equipment and supplies used in compounding	● Compounding equipment/supplies selection and use ○ Beakers ○ Ointment slabs ○ Spatulas ○ Stirrers ○ Scales ○ Hot plates
5.7 Identify and demonstrate sterile compounding processes following aseptic techniques	● Sterile compounding processes for aseptic techniques ○ USP 797
5.8 Explain role of USP (United States Pharmacopeia) to ensure the quality of sterile compounding	● Role of USP (United States Pharmacopeia) ● Sterile compounding (Chapter 797) ● Hazardous sterile compounding (Chapter 800)
5.9 Identify and demonstrate nonsterile compounding processes (e.g., ointments and lotions)	● Nonsterile compounding (Chapter 795) ● Processes ○ Spatulation ○ Geometric dilution ○ Levigation ▪ Ointments ▪ Lotions

	○ Trituration
STANDARD 6.0 APPLY METHODS TO ENSURE MEDICATION SAFETY	
6.1 Identify safety strategies to reduce errors in prescription or medication orders (e.g., correct patient, look-alike/sound-alike medications, tall man lettering, leading and trailing zeroes, high-alert/risk medications, and limit use of error-prone abbreviations and medications)	● Safety strategies to reduce errors in prescription or medication orders ○ 7 Rights ▪ Correct patient ○ Look-alike/sound-alike medications ○ Tall man lettering ○ Leading and trailing zeroes ○ High-alert/risk medications ○ Limit use of error-prone abbreviations and medications
6.2 Identify types of medications that require package inserts and guidelines	● Package inserts and guidelines ○ Hormones
6.3 Identify issues that require pharmacist intervention (i.e., DUR, ADE, OTC recommendation; therapeutic substitution; misuse; missed dose; etc.)	● Pharmacist intervention ○ Drug Utilization Review (DUR) ○ Adverse Drug Effects (ADE) ○ Over the Counter (OTC) recommendation ○ Therapeutic substitution ○ Misuse ○ Missed dose