

## **PART C:**

### **PROFESSIONAL COMPETENCY STATEMENTS FOR ENTRY LEVEL PHARMACY TECHNICIANS LICENSE APPLICANTS**

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### **PROFESSIONAL COMPETENCY STATEMENTS FOR ENTRY LEVEL PHARMACY TECHNICIAN LICENSE APPLICANTS**

The Pharmacists Council of Zimbabwe's competency statements outlined in this section form the basis of preliminary assessment of pharmacy technicians through a Final Qualifying Examination before licensure with the Pharmacist Council of Zimbabwe and subsequent practice. The entry level pharmacy technician will be expected to demonstrate working knowledge of pharmaceutical care and practice. These competency statements will be used as the basis for model competencies in ongoing practice with regular reviews conducted to reflect the dynamic developments and changes which will be occurring in practice settings. The patient-centered approach elucidated by the competency statements is expected to improve the quality of care of the patients as the cadre interacts with other health care professionals.

## **1. Broad responsibilities of a pharmacy technician**

A pharmacy technician is a registered and licensed professional who is trained in providing pharmaceutical care in various health provision settings whereby he/she works in collaboration with other regulated health professionals. The focus of the professional in such settings is the provision of best pharmaceutical care to patients in collaboration with a registered and licensed pharmacist. As such, the cadre is expected to discharge such duties based upon a solid base of professional competencies which revolve around knowledge, skills, attitudes and judgments.

### **The role of the Pharmacy Technician in Zimbabwe.**

In clinical settings, the pharmacy technician is expected:

- to communicate effectively with patients, pharmacists, colleagues and other health care providers within the profession.
- to receive written prescriptions and verbal requests accurately in compliance with legislation established standards, policies and procedures
- to interpret prescriptions correctly, recognizing the trade/generic names of drugs, dosage forms, dose quantity and directions for use
- to be able to assess a prescription for the therapeutic aspects, safety control indications, drug-interactions, drug-disease interactions, under and over prescribing
- to dispense pharmaceutical products accurately, effectively in compliance with regulations.
- to provide information of medicines for drugs in the P, HR categories,
- to contribute to the applications of effective business principles in the pharmacy practice setting, that is inventory control, using information technology computer programmes, purchasing, co-coordinating activities in the pharmacy community.
- to be well informed about procedures for correct drug storage, drug records and medicines disposal

In pharmaceutical manufacturing entities the pharmacy technician should have competencies:

- to control warehouse functions, that is purchasing and receiving raw materials
- to dispense raw materials

- to implement and monitor (work-in-process) in process controls and packaging in accordance with laid down procedures
- to prepare production sheets
- to weigh, measure and mix ingredients according to stipulated methods
- to supervise the cleaning of equipment, floors and walls in accordance with Good Manufacturing Practice.

**Pharmacy Technicians therefore:**

- have responsibility for patient care and to the circle of care through collaborative relationships with pharmacists and other health professionals.
- are health professionals who use their knowledge, skills, abilities, and attitudes to think critically, solve problems, make decisions, and generate professional judgments appropriate to the pharmacy technician role that optimize patient care.
- recognize and differentiate practice situations within the collaborative relationship in which they make decisions and take action independently. They should be able to differentiate situations that require pharmacist intervention and those that are team based in nature.
- are accountable for respecting and supporting the role, rights, and responsibilities of patients, pharmacy technicians, the pharmacy team, health care providers, and others.
- practice in accordance with set professional requirements, standards, regulations, code of ethics and policies.
- possess pharmacy specific knowledge, skill, abilities, and attitudes related to technical and distributive aspects.
- act as mentors to pharmacy technicians, pharmacy technician students, and others.
- collaborate with and are an integral part of the health care team.
- take responsibility for their continuing professional development and commit to life-long learning. The title '*pharmacy technician*' is a professional title protected by legislation.

In undertaking the above responsibilities, the pharmacy technician will provide pharmaceutical care by:

- Compounding, preparing and dispensing medications
- Managing pharmaceutical products and implementing efficient and effective procurement and distribution systems.
- Participating collaboratively with other health professionals in pharmaceutical research and health related programmes.
- Upholding the ethical, legal and professional regulatory obligations of the profession in the discharge of duties and being able to communicate such knowledge to peers, patients and partners in health service provision.
- Possessing both sound pharmacy specific knowledge

**Therefore, in pursuit of the aforementioned the following are specific areas of competencies of the pharmacy technician necessary in the following areas of practice:**

- Ethical, Legal and Professional Responsibilities
- Communication Skills
- Administration & Management
- Management of Relevant Medical Information
- Prescription Interpretation and Dispensing
- Pharmacy Calculations
- General Pharmaceutical Preparation
- Sterile Pharmaceutical Product Preparation
- Pharmaceutical Procurement and Distribution
- Pharmaceutical Knowledge
- Collaborative practice in clinical research settings.

The above-mentioned areas of competency are cross cutting in all various pharmacy settings i.e. Regulatory Affairs, Hospital Pharmacy, Industrial Pharmacy, Wholesaling and Distribution, Pharmaceutical Research and Training.

## **2. Structure of the PCZ qualifying examination**

The Pharmacists Council of Zimbabwe requires that applicants sit for its qualifying examination in two levels; one designed to validate the applicant's theoretical competency and the other testing the applicant in the core competencies unique to the practice of pharmacy by pharmacy technicians in Zimbabwe. These competencies, described below, shall be reviewed regularly in order to ensure that they remain relevant to the overall direction of pharmacy practice in the country.

### **LEVEL I: THEORETICAL COMPETENCY EXAMINATION**

## **3. EXPECTED THEORETICAL KNOWLEDGE AND EXPERTISE OF A PHARMACY TECHNICIAN**

The contribution of a pharmacy technician to health care in Zimbabwe is based upon a body of knowledge and expertise acquired from National Diploma in Pharmaceutical Technology or higher at an approved training College combined with formally designed supervised practical experience in an approved pharmacy practice setting.

**The National Diploma in Pharmaceutical Technology**, as offered by the Ministry of Higher & Tertiary Education at Harare Polytechnic College and the Ministry of Health sponsored **Pharmaceutical Technician Diploma** offer the pharmacy technician student a working knowledge and understanding of the scientific principles and techniques of the pharmaceutical sciences which can prepare him/her to move into the profession of pharmacy and contribute meaningfully in settings of hospital pharmacy, retail pharmacy, industrial pharmacy, wholesaling and pharmaceutical distribution, pharmaceutical marketing, regulatory affairs and areas of collaborative research. The programmes prepare the student to delve and critically analyze and execute functions involved in the selection, procurement, storage, dispensing and use of pharmaceutical products in collaboration with the a qualified and licensed pharmacist.

**Regulatory affairs pharmacy** is practiced mostly through the Medicines Control Authority of Zimbabwe (MCAZ) and the PCZ. Assessment of applicant's competence in this area shall consist of the forensic pharmacy examination administered by the Medicines Control Authority of Zimbabwe (MCAZ). The PCZ shall liaise with the MCAZ so that the two regulatory bodies collaborate on this assessment process, particularly since there is an apparent need to combine the legal affairs with ethics.

## **LEVEL I: FORENSIC PHARMACY**

### **4. Ethical, Legal and Professional Responsibilities: Required competencies (paper 100%)**

- Demonstrate ability to meet legal requirements, uphold and act on ethical principles by:
  - Complying with legal requirements as stated in the various Acts and Regulations, policies, and standards applicable to pharmacy practice in Zimbabwe.
  - Protecting patient confidentiality according to applicable legislation within Zimbabwe.
  - Complying with applicable labour laws in the workplace, occupational health and safety legislation.
  
- **The applicant should, without reference to statutes, books or other documents, be able to:**
  - state, in general, the important provisions of the relevant Acts and Regulations relating to medicines in Zimbabwe
  - describe the functions, duties, powers, meetings and compositions of the Pharmacists Council of Zimbabwe (PCZ) and its various committees
  - describe the duties of the PCZ Register and issues pertaining to registration, offences in connection with the register and erasure from register
  - Understand, explain and summarize the Pharmacy Technicians ( Professional Conduct) Regulations: Code of Ethics, any amendments and repeals, their significance to pharmacy technicians and principles governing other pharmacy practitioners
  - explain the regulations pertaining to pharmacy technicians' pre-registration training and internship.
  - Define the various medicinal and prohibited dangerous drugs, the Dangerous Drugs Regulations that govern their distribution, dispensing and use.
  - describe the powers of inspectors in connection with dangerous drugs
  - State the personnel authorized to possess, use, monitor and account for some dangerous drugs.
  - describe the functions, compositions and powers of the Medicines Control Authority of Zimbabwe (MCAZ) and its committees
  - describe the functions of the MCAZ register of medicines, registration, and labeling requirements of medicines
  - state the minimum requirements for pharmaceutical premises, the licensing of persons

- describe the process of acquiring wholesale dealers and sales representatives permits from the Medicines Control Authority of Zimbabwe
- describe the various categories for distributing drugs and give examples of drugs in each category
- describe the information required on package inserts and information recorded in the drugs register pertaining to every registered drug
- describe the requirements for labels of prescription preparations and pharmaceutical premises

## **LEVEL I: BASIC SCIENTIFIC SUBJECTS**

### **5. Required competencies in basic scientific subjects (paper 100%)**

**Level I of the PCZ's qualifying examination** shall comprise of a one hour test consisting of 60 multiple-choice questions (MCQ) designed around the applicant's National Pharmaceutical Technician Diploma or the National and/or Higher National Diploma in Pharmaceutical Technology training. The applicant should demonstrate an understanding of general concepts in core basic scientific subjects including; Pharmacognosy, Biology, Communication Skills, Physical & Inorganic Chemistry, Pharmaceutical Calculations, Forensic Pharmacy, Dispensing Practicals, Pharmaceutics, Information Technology, Organic Chemistry Pharmacology; Physiology; Analytical Chemistry; Pharmaceutical Quality Assurance; Pharmaceutical Technology & Manufacturing, Natural Pharmaceutical Products; Pharmaceutical Biotechnology.

The following are the competencies upon which the applicant's theoretical understanding should be assessed.

- **Perform calculations required to measure, weigh, compound, dispense, and administer medication**
  - Calculate percentages, dilutions, displacement values, weight of medication to be compounded or dispensed; reduce and enlarge formulation quantities
  - Calculate the quantity of ingredients needed to compound the product.
  - Determine appropriate doses based on age, weight and surface area
  - Demonstrate an ability to use weighing and measuring equipment
  - Demonstrate an understanding of the metric system and the SI units
  - Calculate quantities of pharmaceutical materials in various medicines formulae
  - Calculate amounts of medicines to be supplied on prescription based on the number of prescribed doses and time intervals
  - Calculate or convert drug concentrations, ratio strengths, and/or extent of ionization.
- **Demonstrate the ability to select and dispense medications in a manner that promotes safe and effective use**
  - Execute proper dispensing procedures and practices
  - Uphold the proper principles and practices for dispensing including the use of standard operating procedures (SOPs)

- Able to read, interpret prescriptions and identify medicinal products by their generic and/or common names and where necessary by their brand names
  - Provide information regarding appropriate packaging, storage, handling, administration, and disposal of medications
  - Utilize the proper equipment used in the dispensing of medicines
- **Demonstrate the knowledge to compound extemporaneous preparations and sterile products**
    - Identify techniques, procedures, and equipment related to drug preparation, compounding, and quality assurance
- **Demonstrate thorough knowledge of classes, mechanisms of action, and uses of a wide variety of pharmacologic agents**
    - Identify the general action and use of different classes of medicines
    - Identify the nature and causes of diseases
    - Demonstrate knowledge on the medical terms relevant to medical treatments
    - Understand and explain the action and uses of drugs in the treatment of various body systems and clinical conditions
    - Identify the routes of drug administration, delivery, safety profiles, excretion, interactions and adverse drug reactions

## **LEVEL II:**

### **6. ZIMBABWEAN SPECIFIC CORE COMPETENCIES FOR PHARMACY PRACTICE**

With the significant manpower shortage of pharmacists in clinical settings within the public sector particularly at District Level, the role of the pharmacy technician has expanded whereby the cadre has assumed specific responsibilities which were traditionally pharmacist specific. As such, the job enlargement has brought with it a significant need for the pharmacy technician to develop extra competencies beyond what the mainline responsibilities required.

The “essential medicines concept”, the policies concerning affordable, accessible, equitable, and sustainable provision of generic medicinal products; advances in the management of HIV/AIDS; TB and Malaria require development of relevant competencies necessary for the effective pharmaceutical care and collaborative participation by the pharmacy technician.

### **7. PRACTICE SPECIFIC COMPETENCY EXAMINATION**

**This level of the PCZ qualifying examination shall comprise of an hour long test consisting of 60 multiple choice questions based on the ten areas of responsibility and specific competencies which include:**

8. Area of professional responsibility # I: Ethical, Legal and Professional Responsibilities
9. Area of professional responsibility # II: Communication Skills

10. Area of professional responsibility # III: Administration & Management
11. Area of professional responsibility # IV: Management of Medical Information
12. Area of professional responsibility # V: Prescription Interpretation and Dispensing
13. Area of professional responsibility # VI: Pharmaceutical Calculations
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The pharmacy technician's responsibilities and required competencies in each of these areas are outlined below.

## **8. AREA OF PROFESSIONAL RESPONSIBILITY # I: ETHICAL, LEGAL AND PROFESSIONAL RESPONSIBILITIES**

### **Pharmacy technician's specific responsibilities in Ethical, Legal and Professional Responsibilities**

When practicing in position of authority either in the public or private sectors, the pharmacy technician is expected to possess a thorough understanding of national policy documents upon which pharmacy services are derived. The pharmacy technician in such a position, whether in the public or private sector, would be expected to interpret such policies and guidelines in order to provide the most appropriate advice and ensure smooth implementation in the interest of public health.

### **Required competencies in Ethical, Legal and Professional Responsibilities (10% of the examination)**

**Demonstrate thorough knowledge and understanding of the duties of pharmacy technician in practice.**

- Be aware of legislative changes which affect pharmacy technician practice.
- Critically evaluate personal performance, assess changes in the practice environment, identify areas for professional growth and improvement, and undertake continuing educational activities to address these needs.
- Observe the laws and ethical standards in the spirit as well as the letter.
- Participate in conferences, seminars, workshops and other continuing education courses relating to pharmacy technician practice in order to keep abreast of current drug and non-prescription medication preparation.

**Demonstrate understanding of legal requirements, professional integrity and act in such manner that upholds professional standards of practice and codes of ethics by:**

- Meeting the requirements of Acts and Regulations and other legislations regulating the practice of pharmacy technicians.

- Upholding and acting on ethical principles as defined by the Pharmacy Technicians Conduct Regulations: Codes of Ethics.
- Primarily being accountable to the clients by respecting their right to make their own choices, ensuring client privacy and confidentiality.
- Complying with pharmacy law applicable to the practice site, with respect to labeling, prescription and record keeping requirements in accordance with legislation.

## **9. AREA OF PROFESSIONAL RESPONSIBILITY # II: COMMUNICATION SKILLS**

### **Pharmacy technician's specific responsibilities in Communication Skills**

Pharmacy technicians are expected to communicate effectively with patients, pharmacists, other health care team members, and educate, where appropriate, in order to promote and support optimal patient care and well-being.

### **Required competencies in Communication Skills (10% of the examination)**

- **Demonstrate an ability to collaborate with other professional and uphold teamwork by:**
  - Collaborating with other health care professionals to meet patient health care needs, goals, and outcomes.
  - Developing collaborative relationships with pharmacists and other health care professionals.
  - Participating in the circle of care to promote patient health and wellness.
  - Cooperating with and show respect for all members of the inter-professional team.
  - Making their expertise available to others and sharing relevant information.
  - Contributing to achieving mutually determined goals and objectives.
  - Supporting other professionals and accepting their support to optimize health outcomes.
  - Collaborating with the pharmacist to identify the most appropriate health care provider needs.
  - Recognizing and referring situations requiring the knowledge, skills, and abilities of a pharmacist to the pharmacist.
  - Working with other health care providers to achieve the desired health outcomes.
  - Understanding, participating in, and promoting patient safety initiatives.
  - Participating as a team member in organized initiatives for disaster and emergency preparedness
- **Demonstrate an ability to establish and maintain effective communications in practice settings by:**
  - Using effective comprehension and proficiency in written and verbal English, use of appropriate verbal, non-verbal, and listening skills, display of clear, concise, and effective writing skills and selecting appropriate communication techniques for use with patients and other health care professionals.
  - Developing professional relationships with patients and health care professionals in order to establish and maintain rapport by using effective

communication techniques, verbal, non-verbal, and/or written communications, actively listening skills, and adapting communication strategies to meet the needs of diversity, sensitivity, respect and empathy.

- Demonstrating an understanding of the impact that individual differences have on communication.
  - Conducting interpersonal interactions and managing conflict, in a professional manner.
  - Coordinating written, electronic, and oral communications throughout the practice setting.
- **Demonstrate ability to document in compliance with legislation, standards, policies, and procedures.**
    - Document information, procedures, and actions accurately, clearly, and in a timely manner.

## **10. AREA OF PROFESSIONAL RESPONSIBILITY # III: ADMINISTRATION AND MANAGEMENT**

### **Pharmacy technician's specific responsibilities in Administration and Management:**

Pharmacy Technicians shall apply practice knowledge and skills of technical duties as they pertain to the site of pharmacy technician practice with the goal of optimizing pharmaceutical care and inter-professional relations. In doing so, they should have an ability to administer and manage their service provision and contribute to the overall practice of pharmacy.

### **Required competencies in Administration and Management (10% of the examination)**

- **Demonstrate an understanding of Zimbabwe's principles designed to ensure sustainable and equitable distribution of accessible, available, safe, and good quality medicines**
  - Describe the Essential Drugs Concept and its application
  - Describe the principles of rational drug use
  - Describe the role of treatment guidelines and formularies
  - Appraise the generic medicines policy in Zimbabwe
  - Describe the processes involving medicines procurement, quantification, quality assurance and medicines donations
- **Describe the safe storage and distribution: system design; inventory control; storage; distribution; monitoring and evaluation**

- Demonstrate the principles of effective inter-professional and intra-professional working relationships.
  - apply supervisory principles and skills relevant to human and physical resources if in a supervisory position
  - Demonstrate organizational skills, prioritize and organize workflow and demonstrate time management skills.
  - Demonstrate knowledge and skills in utilizing formularies, identification of generic substitutions, indication of the role of co-payments and deductible limits and application of prescription quantity limitations.
- **Demonstrate the principles of effective inter-professional and intra-professional working relationships.**
    - if in a supervisory position, apply supervisory principles and skills relevant to human and physical resources
- **Demonstrate the ability to participate and contribute to the administration and management of Pharmacy Practice**
    - Coordinating written, electronic, and oral communications throughout the practice setting (for example, route phone calls, faxes, verbal and written refill authorizations; disseminate policy and procedure changes
- **Demonstrate an ability to perform, generate and co-ordinate pharmacy practice administration and management in collaboration with the pharmacist by:**
    - Updating, maintaining and using manual or electronic patient information, patient profiles, prescription records, inventory logs, and reference materials in order to perform job related activities.
    - Collecting productivity information e.g., the number of prescriptions filled, rejected claim status)
    - Participating in quality assurance activities e.g., medication error prevention, customer satisfaction surveys, and internal audits of processes
    - Generating quality assurance reports.
    - Implementing and monitoring policies and procedures for general pharmacy practice
    - Perform patient billing and accounting functions for products and services.
    - Communicating with third-party payment plans and medical aids funders to determine or verify coverage for products and services
    - Coordinating and/or participating in staff training and continuing education
    - Participating in the establishment, implementation, and monitoring of the practice setting's policies and procedures

**11. AREA OF PROFESSIONAL RESPONSIBILITY # IV: MANAGEMENT OF MEDICAL INFORMATION.**

## **Pharmacy technician's specific responsibilities in the Management of Medical Information**

Pharmacy Technicians are also expected to demonstrate their capabilities for managing medical information through access, retrieval, evaluation and dissemination to ensure safe and effective pharmaceutical care and to promote health. It is the responsibility of the pharmacy technician to promote safe and effective drug distribution by:

- preparing products in a manner that ensures patient safety through the accuracy and quality of the product.
- receiving, gathering, entering, and storing prescription and patient information so that this information can be easily accessed and retrieved.

## **Required competencies in the Management of Medical Information (10% of the examination)**

**Demonstrate the ability to identify and use appropriate sources of relevant information by:**

- naming major sources of information, assessing the appropriateness of these sources and determining the value of these sources.
  - Being able to use a variety of retrieval techniques to access relevant information and being capable of assessing the suitability and reliability of these techniques.
  - Being able to assess the relevance, applicability, accuracy, reliability, and validity of information and the sources of information in the dispensing process.
- **Demonstrate the ability and knowledge to receive and process a prescription through:**
    - Creating and/or maintaining a patient record, identity, health history, confirmed allergies, medication use, and third party payment information.
    - Assessing prescription for clarity, completeness, authenticity, and conformation to legal requirements by verifying the identity and the legitimacy of the prescriber, the authenticity of the prescriber's signature, and the source (origin) of the prescription.
    - Consulting with the patient, pharmacist, or prescriber when required.
    - Interpreting the prescription requirements including abbreviations, numerals, and symbols.
    - Performing the necessary pharmaceutical calculations.
    - Ensuring that the prescription information is recorded accurately on patient records.
    - Alerting the pharmacist to actual and potential drug therapy related issues.
  - **Demonstrate knowledge and skill to transfer prescription authorizations to another pharmacy provider at patients' requests.**
    - Determine the legality and appropriateness of the request.
    - Document transfers.

## **12. AREAS OF PROFESSIONAL RESPONSIBILITY # V: PRESCRIPTION INTERPRETATION AND ORDER DISPENSING.**

### **Pharmacy technician's specific responsibilities in prescription interpretation and dispensing**

Pharmacy Technicians are expected to demonstrate competency in prescription interpretation and dispensing in various clinical settings.

### **Required competencies in prescription interpretation and dispensing (10% of the examination)**

#### **Demonstrate the ability to receive and process a prescription by:**

- Receiving prescription/medication order(s) from patient/ patient's representative, prescriber, or other healthcare professional
  - Assisting the pharmacist in obtaining from the patient/patient's representative such information as diagnosis or desired therapeutic outcome, disease state, medication history (including over-the-counter [OTC] medications and dietary supplements), allergies, adverse reactions, medical history and other relevant patient information.
  - Updating the medical record/patient profile with such information as medication history (including [OTC] medications and dietary supplements), disease states, compliance/adherence patterns, allergies, medication duplication, and/or drug-disease, drug-drug, drug-laboratory, drug-dietary supplement and/or OTC, and drug-food interactions
  - Correctly interpreting prescription or medication orders.
  - Identifying and correctly interpreting each component of the prescription or medication order including omissions.
  - Correctly entering the prescription or medication order into a pharmacy computer program.
  - Working in collaboration with the pharmacist in screening for client allergies.
  - Correctly interpreting medical abbreviations and terminology commonly used in prescription and medication order writing.
  - Performing checking functions in accordance with professional standards.
- **Demonstrate knowledge and ability to select, prepare, and package products for release to the patient by:**
- Selecting appropriate products/brands.
  - Applying knowledge of brand and generic names, dosages, and dosage form in product selection.
  - Determining drug interchangeability based on formulary policies.
  - Ensuring the integrity, stability, and where applicable, sterility of products
  - Retrieve, count, pour, weigh, or measure commercially available products.
  - Determining the suitable environment/conditions, equipment, and formulation procedures and techniques required to prepare or compound products.

- Using clean technique when compounding non-sterile and sterile preparations and calculating amounts for each ingredient required for the compound.
  - Documenting the source, expiration dates, and lot numbers of each ingredient used.
  - Mixing, reconstituting, or compounding products according to established formulations, guidelines, policies, and procedures.
  - Identifying an appropriate expiration date, storage, and handling conditions for compounded products
- **Demonstrate competency to ensure accuracy and quality of the final product.**
    - Verify the product against the prescription and/or formulation information using an independent double check and document actions taken.
- **Collaborate with the pharmacist in the release of the product.**
    - Confirm that the pharmacist has reviewed the prescription and the patient record.
    - Confirm that patients have been provided consultation with the pharmacist when the pharmacist is required to counsel or has indicated a concern or a concern has been recognized by the pharmacy technician or when patients have indicated concerns.
    - Release/distribute the checked pharmaceutical product to the right patient, health care personnel, facility, or authorized person.

### **13. AREAS OF PROFESSIONAL RESPONSIBILITY # VI: PHARMACEUTICAL CALCULATIONS.**

#### **Pharmacy technician's sector specific responsibilities in Pharmaceutical Calculations**

Pharmacy Technicians shall be able demonstrate competency of pharmaceutical calculations.

#### **Required competencies in Pharmaceutical Calculations (10% of the examination)**

- **Demonstrate an ability to perform pharmaceutical calculations necessary for preparation of required pharmaceutical products by:**
  - Demonstrate the ability to calculate the amount of drug product to dispense for a prescription.
  - Accurately applying mathematical principles to a variety of tasks required in the preparation and distribution of drugs.
  - Being able to solve pharmaceutical calculations that require common and decimal fraction conversion, manipulation of ratios and proportions.

- **Demonstrate knowledge of the various systems of measure used in pharmacy practice and conversion to metric by:**
  - Calculating accurately for compounding products.
  - Calculating accurately for preparing sterile products (IV admixture, parenteral nutrition and chemotherapy).
  - Using drug doses based upon body weight and patient age.
  - Calculating the drip rate for IV Admixtures.

#### **14. AREAS OF PROFESSIONAL RESPONSIBILITY # VII: GENERAL PHARMACEUTICAL PREPARATION.**

##### **Pharmacy technician's specific responsibilities in General Pharmaceutical Preparation**

Pharmacy Technicians shall be able to demonstrate competency in general pharmaceutical preparation.

##### **Required competencies in general pharmaceutical preparation (10% of the examination)**

- **Demonstrate the knowledge, skills and techniques for the compounding of drug preparations by:**
  - Being able to correctly prepare medications.
  - Selecting the correct medication
  - Accurately labeling products according to legal requirements.
  - Identifying appropriate precaution labels for each drug.
  - Practice and comply with current infection prevention and control standards & guidelines and that facilitate such activities within their workplace in order to prevent infection in patients, staff and the general public.

#### **15. AREAS OF PROFESSIONAL RESPONSIBILITY # VIII: STERILE PRODUCT PREPARATION**

##### **Pharmacy technician's specific responsibilities in Sterile Product Preparation**

Pharmacy Technicians shall be able to demonstrate competency in sterile product preparation.

##### **Required competencies in Sterile Product Preparation (10% of the examination)**

- **Demonstrate the ability to prepare intravenous admixtures in accordance with professional standards by:**
  - Applying knowledge of the principles of sterile product preparation, using aseptic techniques in accordance with professional standards.

- Being able to prepare intravenous nutrition solutions, and intravenous chemotherapy medications in accordance with professional standards.
- Demonstrate knowledge of drug solubility, stability, incompatibility, contamination and product handling.
- Safely utilizing and maintaining equipment in the preparation of sterile products and appropriately disposing of drugs, needles and materials in accordance with professional standards.

## **16. AREAS OF PROFESSIONAL RESPONSIBILITY # IX: PHARMACEUTICAL PROCUREMENT AND DISTRIBUTION.**

### **Pharmacy technician's specific responsibilities in Pharmaceutical procurement and distribution**

Pharmacy Technicians are expected to manage drug procurement and distribution by performing the functions of acquisition and preparation of drugs to ensure their safety, accuracy and quality. In doing so, pharmacy technicians collaborate in the management of systems for drug distribution and inventory control to ensure patient safety and the safety, accuracy, quality, integrity, and timeliness of the pharmaceutical products.

### **Required competencies in Pharmaceutical procurement and distribution (10% of the examination)**

- **Demonstrate ability to manage the drug distribution system by:**
  - Recognizing and responding to needs.
  - Contributing to the implementation and maintenance of safe and effective systems of drug supply and distribution.
  - Following distribution policies and procedures.
  - Recognizing and responding to unusual patterns of drug distribution including diversion, drug misuse, and fluctuations in utilization.
- **Demonstrate ability to manage inventory by employing inventory management systems and strategies that incorporate best practice approaches by:**
  - Identifying pharmaceuticals, durable and non-durable medical equipment, devices, and supplies to be ordered
  - Determining and maintaining inventory requirements sufficient for efficient operations.
  - Setting order limits and calculating replenishment orders.
  - Preparing and placing orders for stock and supplies from licensed and legitimate pharmaceutical suppliers/sources and in compliance with relevant legislation.
  - Acquiring, receiving, verifying, and storing stock and supplies purchased and investigating and resolving discrepancies.
  - Ensuring that receipt and storage of all medications complies with legislative requirements and policies and procedures.
  - Identifying, reporting, and removing defective, unsafe, and recalled products.

- Disposing of, destroying, or returning expired, unusable products, and complete recalls of products.
  
- **Demonstrate thorough knowledge and skills in maintaining medication and inventory control systems by:**
  - Placing routine orders and emergency orders in compliance with legal, regulatory, formulary, budgetary, and contractual requirements
  - Receiving products and placing them under proper storage conditions while incorporating error prevention strategies
  - Implement and monitor policies and procedures to deter theft and/or drug diversion
  - Maintaining a record of products ordered, received, and removed from inventory
  - Maintain record-keeping systems for repackaging, non-patient specific compounding, recalls, and returns of pharmaceuticals, durable and non-durable medical equipment, devices, and supplies

## **17. AREAS OF PROFESSIONAL RESPONSIBILITY # X: PHARMACEUTICAL KNOWLEDGE.**

### **Pharmacy technician's specific responsibilities in Pharmaceutical Knowledge**

The Pharmacy Technician shall be able to categorize drugs into the major therapeutic classifications, distinguish between generic and trade names of drugs, and generally identify accepted drug dosage forms, strengths and routes.

### **Required competencies in Pharmaceutical Knowledge (10% of the examination)**

- Describe the medical conditions treated by commonly used medications.
- Demonstrate knowledge of human anatomy and physiology.
- Demonstrate drug knowledge to identify duplication of therapy and to verify correct drug dispensing.
- Demonstrate familiarity with commonly used nonprescription drugs.
- possess knowledge of actual and potential drug interactions.

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## **LIST OF STUDY MATERIALS FOR QUALIFYING EXAMINATIONS**

### **Level 1 (A): Forensic Pharmacy**

1. Health Professions Act Chapter 27:19
2. Medicinal, Dental & Allied Professions (information) Regulations, 1993.
3. Dangerous Drugs Act: Chapter 15:02
4. Dangerous Drugs Regulations, 1975.
5. Hazardous Substances & Articles Regulations.
6. Hazardous Substances & Articles Act: Chapter 15:05.
7. Medicines & Allied Substances Control Act: Chapter 15:03
8. Medicines & Allied Substances Control (General) Regulations, 1997
9. Pharmaceutical Chemists (Professional Conduct) Regulations, 1989.
10. Pharmaceutical Chemists (Pre registration Training) Regulations, 1976.

### **Level I (B): General concepts in core basic scientific subjects**

1. Shargel Leon, Hutnick Alan H., Souney Paul F., Swanson Larry N. Comprehensive Pharmacy Review. 6<sup>th</sup> Edition 2007 (or later). Publisher; Wolters Kluwer, Lippincott, Williams and Wilkins
2. Dispensing for Pharmaceutical Students, 12<sup>th</sup> edition, Carter, S.J., Pitman Publishing, Inc., (latest edition)
3. Cooper and Gunn's Dispensing for Pharmaceutical Students; edited by SJ Carter.
4. Pharmaceutical Practice; edited by DM Collett and ME Aulton.
5. Pharmaceutics – the science of dosage form design; edited by ME Aulton.
6. Science and the Beauty Business – The Science of Cosmetics; edited by JV Simmons.
7. Pharmaceutical Production Facilities: Design and Application; edited by G Cole.
8. The Rules Governing Medicinal Products in the European Community, Volume IV – Guide to good manufacturing practice for medicinal products.
9. Pharmaceutical Biotechnology; edited by DJA Crommelin and RD Sindelar.
10. Pharmaceutics – the science of dosage form design; edited by M. E. Aulton\*.
11. Pharmaceutical Practice; edited by DM Collett and ME Aulton.
12. Pharmaceutical Practice; edited by AJ Winfield and RME Richards.
13. Pharmaceutical Microbiology; edited by WB Hugo and AD Russel\*.
14. Koda-Kimble M A, Young L Y, Kradjan WA, Guglielmo BJ, Alldredge BK, Corelli RL. Applied Therapeutics: The Clinical Use of Drugs. 8<sup>th</sup> Edition (or later). Publisher; Lippincott Williams and Wilkins.

### **Level II: Professional Core Competencies**

1. Ministry of Health and Child Welfare. Zimbabwe National Drug Policy, Department of Pharmacy Services, Zimbabwe Essential Drugs Action Programme (ZEDAP). Republic of Zimbabwe, December 1995.
2. Ministry of Health and Child Welfare. Zimbabwe National Health Policy
3. Ministry of Health and Child Welfare. The National Health Strategy for Zimbabwe 2009-2013. Equity and quality in Health: A People's Right.
4. Ministry of Health and Child Welfare, Primary Health Care. Zimbabwe National Traditional Medicine Policy, 2007.
5. Ministry of Health and Child Welfare, Primary Health Care. National HIV/AIDS and Tuberculosis Control Programmes. National Guidelines for TB/HIV Co-Management.
6. Ministry of Health and Child Welfare, Primary Health Care. National Drug and Therapeutics Policy Advisory Committee (NDTPAC). The Essential Drug List for Zimbabwe (EDLIZ 2007).

7. Ministry of Health and Child Welfare, Primary Health Care. The National Drug and Therapeutics Policy Advisory Committee (NDTPAC). Guidelines for Antiretroviral Therapy in Zimbabwe, August 2005.
8. WHO (Geneva); Action Programme on Essential Drugs, and Unit of Pharmaceuticals. Report of a WHO Consultative Group, New Delhi, Dec 1988.
9. WHO: Action Programme on Essential Drugs. Revision of undergraduate pharmacy curricula. Report on an informal consultation in Nyanga, Zimbabwe. April 1997. WHO/DAP/98.1
10. The role of the pharmacist in the health care system. Report of a WHO Consultative Group, New Delhi, India, 13-16 December, 1988 and Report of a WHO Meeting, Tokyo, Japan, 31 August-3 September, 1993
11. Shargel Leon, Hutnick Alan H., Souney Paul F., Swanson Larry N. Comprehensive Pharmacy Review. 6<sup>th</sup> Edition 2007 (or later). Publisher; Wolters Kluwer, Lippincott, Williams and Wilkins.
12. Quick JD et al. (1997) Managing Drug Supply. Management Sciences for Health in collaboration with WHO. Kumarian Press, Connecticut, USA.
13. Pocock SJ (1986) Clinical Trials. A practical approach. John Wiley & Sons, Toronto, Canada (or latest edition).
14. Drummond MF, Stockddart GL, Torrance GW (1986) Methods for the economic evaluation of care programmes (or latest edition).
15. Dukes MNG (1993) Drug utilization studies. Methods and uses. WHO Regional Publications. European Series No. 45. WHO Regional Office for Europe, Copenhagen, Denmark
16. Pharmaceutical Practice, Collett, D.M. and Aulton, M.E., Churchill Livingstone, (latest edition)
17. Pharmaceutical Production Facilities: Design and Application; edited by G Cole.
18. The Rules Governing Medicinal Products in the European Community, Volume IV – Guide to good manufacturing practice for medicinal products.
19. Koda-Kimble M A, Young L Y, Kradjan WA, Guglielmo BJ, Alldredge BK, Corelli RL. Applied Therapeutics: The Clinical Use of Drugs. 8<sup>th</sup> Edition (or later). Publisher; Lippincott Williams and Wilkins.