الجمهورية اليمنية

وزارة الصحة والسكان

معهد القبس الطبي

صنعاء

دليل التدريب الميداني

لخريجي قسم الصيدلة

دبلوم فني صيدلة

معهد القبس

٢٠٠٥-٢٠٠٦م


معهد القبس
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Pharmacy Technician Training Manual

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الفهرس العربي

Introduction

The purpose of this manual is to provide pharmacies and pharmacists in the state a training manual of pharmacy material that has been approved by the College.

Due to increased quantity of prescriptions in recent years, there has been an increased demand for pharmacy staff. The increased use of pharmacy technicians should increase efficiency and quality of pharmaceutical care. However, the pharmacist must live up to the full potential of his or her professional roles and responsibilities.

PHARMACY TECHNICIAN TRAINING GUIDELINES

All pharmacy technicians must have satisfactorily completed an initial Pharmacy Technician Training Program, Phase 1**, prior to receiving a Pharmacy Technician Permit.**
After receiving the permit, they may begin on-the-job training (OJT)

Phase 2**, in the prescription department.**

This program must be taught in each pharmacy employing pharmacy technicians. The development or implementation of a program is the responsibility of the pharmacist manager, who may be requested to submit the instructional text of the training program to the State Board of Pharmacy for approval.

The pharmacist manager, or another pharmacist in the pharmacy whom he or she may designate, shall conduct the training and attest to its successful completion. Proof of this training and subsequent training must be maintained in the pharmacy and available for inspection.

The training program may be adjusted to meet the specific needs of an individual, but the adjusted program must conform to the minimum standards in these guidelines.

Phase 1

(Initial Training)

I. **Orientation**

a. **Tour of Pharmacy**

- **Location of Medications**
- **Prescription Files**
- **Information Sources**
- **Insurance Information**
- **Other areas deemed appropriate**

b. **Organization Chart (chain of command)**

- **Describe your store's organizational chart. The pharmacist is always responsible for the tasks the technician completes.**

c. **Policy and Procedures Manual (if one exists)**

- **The development of a policy and procedure manual is highly recommended.**

d. **Confidentiality of Patient Information**

- **See Appendix 1**

e. **Health Insurance Portability and Accountability Act of 1996. (HIPAA)**

- **See Appendix 2**

f. **Patient Information Literature**

- **There are several prescription medications that require patient package inserts when a prescription is dispensed. Examples are Premarin, birth control pills, etc. Other useful information to help instruct a patient is also available. The tech should be able to help the pharmacist in maintaining these sources of information.**

g. **Reference Sources**

- **The tech should know:**

1. **Where the reference books are located in the pharmacy**
2. **Legal requirements pertaining to keeping an updated pharmacy library. (See Rules and Regulations section of current Law Book)**

h. **Name Tags**

i. **The public should be able to distinguish the pharmacist from any support personnel in the pharmacy. All support personnel must be distinctly identifiable from a practicing pharmacist. Name and job title should identify "Tech" from other support personnel.**

i. **Dress Code**

i. **Each pharmacy should determine the dress code, however in general a clean and professional appearance is desired.**

II. **Job Description**

a. **Role of Pharmacist**

- **The pharmacist is responsible for all judgmental tasks involved in**

dispensing a prescription and for maintaining good pharmaceutical care.

- **The pharmacist is responsible for all counseling and shall not delegate this task to anyone. An intern is allowed to counsel if deemed appropriate by the pharmacist.**
- **The pharmacist may delegate non-judgmental tasks to be done, but the responsibility, both legally and professionally, stays with the pharmacist.**
- **The pharmacist's duties are a provision of those acts or services that are necessary to provide pharmaceutical care.**

b. **Role of Support Personnel**

- **The supportive personnel may perform tasks other than those of a pharmacist or technician.**

c. **Role of Pharmacy Technicians**

- **May perform any duties supportive personnel are allowed to perform**
- **Count and/or pour medications**
- **Prepackage and properly label medications (i.e. unit dose)**
- **Affix auxiliary labels to the container as directed by pharmacist.**
- **Affix the prescription label to proper container**
- **Reconstitution of medication (i.e. liquid antibiotics)**
- **Bulk compounding, including such items as non-sterile topical compounds, sterile irrigation solutions and products prepared in relatively large volume for internal or external use. Documentation of a system of in-process and final checks and controls must be developed or approved by the certifying pharmacist and carefully and systematically enforced.**
- **May perform functions involving reconstitution of single dose units of parenteral products that are to be administered to a given patient as a unit, and perform functions involving the addition of one manufacturer's prepared unit (whole or part) to another manufacturer's prepared unit, if the unit is to be administered as one dose to a patient. The pharmacist must establish procedures for parenteral products and certify the ingredients, and label the finished product.**
- **May assist the pharmacist in the annual Controlled Dangerous Substance inventory. The pharmacist remains responsible for completeness and accuracy.**

d. **Personal Attributes**

- **Self Confidence: Knowing when and whom to ask for help is part of self-confidence.**
- **Knowledge: Using the training given, the tech may help the pharmacist in knowing a patient and remembering what has occurred in the past regarding the patient.**

- **Sincerity: The combination of honesty, common sense and diplomacy may be characterized as sincerity. Show concern for the patient.**
- **Concern for others: A concern for others, coupled with empathy, open-mindedness and understanding of their opinions or situation is important. Try to look at their point of view. Are there other helpful options?**
- **Tact: Tact is an important aspect of verbal communication in any pharmacy.**

e. **Pharmacy Technicians interrelationships with:**

- **Pharmacists: All tasks performed by the tech are the ultimate responsibility of the pharmacist. The tech works under direct and immediate supervision by the pharmacist, as stated in the State Board Rules. The tech should present any problems or discrepancies to the pharmacist.**
- **Patients: The tech should be courteous and tactful when obtaining information. Refer all medication questions to the pharmacist.**
- **Physicians: The tech should be courteous and identify themselves. Refer all medication questions to the pharmacist.**
- **Nurses and/or medical office staff: Refer all medication questions to the pharmacist.**

III. Communication Techniques

a. **Telephone Etiquette and protocol**

- **It is necessary and important that you always identify yourself as a technician when communication via telephone. Whether answering a call at the pharmacy or phoning a doctor's office or insurance company.**

1. **Example 1) "Thank you for calling <u>(your store name here)</u>, my name is <u>(your name here),</u>** technician**, how may I help you."**
2. **Example 2) "Hello my name is <u>(your name here)</u>, I'm a** technician **with <u>(your store name here.)</u>…."**

- **Basic communication skills: Always communicate with a helpful attitude.**
- **Be an active listener.**
- **Communication is a two-way street.**
- **Articulation: the use of precise words to describe a situation.**
- **Pleasant voice: speak slowly, distinctly, and pleasantly. The caller cannot see facial expressions so the voice is all important.**
- **Friendliness is one of the easiest and most effective tools of good communication.**
- **Listen attentively and patiently. Do not assume you know**

what is going to be said; wait for the person to finish before responding.

IV. Pharmacy Laws and Rules

a. **Pharmacy Law – refer to ministry of health**

b. **Pharmacy Rules**

- **Transfer of prescriptions: only the pharmacist or intern is allowed to transfer a prescription.**
- **Interns may perform all functions of a pharmacist, except the final check of a prescription.**
- **Telephone prescriptions: only a pharmacist or intern is allowed to take new prescriptions.**
- **Pharmacy access: only a pharmacist shall be permitted to unlock the pharmacy area or any additional storage areas for dangerous drugs, except in an extreme emergency.**
- **Refill authorization records: when an agent of a licensed practitioner calls in a refill, the name of the person shall be documented.**
- **Drug Expiration dating: all outdated prescription drugs shall be removed from the active inventory area upon expiration and cannot be used to fill prescriptions. The removal from the pharmacy of these expired drugs must occur within six months; either by destruction or by being returned to the supplier.**

c. **Drug Enforcement Administration (DEA)**

- **Identification of DEA drug labels**
- **Ordering and receiving of controlled dangerous drugs**
- **Rationale of DEA drugs**
- **Inventory and/or accountability: the Tech is allowed to help the pharmacist in the actual inventory which must be performed between May 1 and July 1.**
- **Storage of controlled substances.**
- **Filing Systems: Different types of filing are allowed. The tech should know which type of filing is being utilized in the pharmacy.**
- **Exempt Narcotic Sales: The pharmacist is required to handle the sale of all exempt narcotics.**
- **Formula for calculating and confirming DEA number: Add the first, third, and fifth digits of the DEA number. Then add the second, fourth, and sixth digits; and multiply this sum by 2. Add the two numbers. The last digit of this sum will be the same as the last digit of the DEA number.**

1. **EXAMPLE: DEA # 1234563**

a. **1+3+5 = 9, 2x(2+4+6) = 24 TOTAL = 33**

- **OSTAR: Requirements and working of the CII narcotic tracking system.**
- **Regulation of mailing prescriptions: Through US Postal Service, UPS, FedEx, etc.**

- **Requirements relating to prescriptions transmitted by physician assistants.**
- **Prescribing limitations of optometrist, podiatrist, dentist, veterinarian, etc.**

- **Record keeping for all control dangerous drug prescriptions: Length of time prescriptions are valid depends on Schedule of Dangerous Drugs.**

d. **Transfer prescriptions:**

1. **Schedule II – may not be transferred**
2. **Schedule III-V – may be transferred ONE time only. However, pharmacies electronically sharing a real-time, online database may transfer up to the maximum refills permitted by law and the prescriber's authorization.**

e. **Classification of Drugs:**

- **Schedule I**

1. **High potential for abuse**
2. **No accepted medical use in treatment under medical supervision**
3. **Heroin, marijuana, LSD**

- **Schedule II**

1. **High potential for abuse**
2. **Currently accepted medical use in treatment in US, or currently accepted medical use with restrictions.**
3. **The abuse of the substance may lead to severe psychic or physical dependence/addiction**
4. **Meperidine, morphine, amphetamines, Ritalin, Percocet, Tylox.**
5. **Require a written prescription that is not physically altered, filled within 30 days, and cannot be refilled.**
6. **The patient must also present a valid ID when filling a prescription for a scheduled drug. The ID type as well as number should promptly be recorded on the front of the prescription.**

- **Schedule III**

1. **A potential for abuse less than the substances in Schedule I and II.**
2. **Currently accepted medical use in treatment in the US**
3. **Abuse may lead to moderate or low physical dependence of high psychological dependence/habituation.**
4. **Codeine combinations, Fiorinal, Paregoric**
5. **May be refilled up to five times in a six-month period.**
6. **The patient must also present a valid ID when filling a prescription for a scheduled drug. The ID type as well as number should promptly be recorded on the front of the prescription.**

- **Schedule IV**

1. **Low potential for abuse relative to Schedule III**
2. **Currently accepted medical use in treatment in the US**
3. **Abuse of the substance may lead to physical dependence or psychological dependence relative to Schedule III**

4. **Valium, benzodiazepines**
5. **May be refilled up to five times in a six-month period.**
6. **The patient must also present a valid ID when filling a prescription for a scheduled drug. The ID type as well as number should promptly be recorded on the front of the prescription.**
7.

- **Schedule V- Pseudoephedrine products**

1. **Pseudoephedrine products have the potential to be diverted for the purpose of manufacturing methamphetamine.**
2. **Products containing pseudoephedrine may be purchased without a prescription behind the counter at the pharmacy, provided the following criteria are met by the patient:**

a. **They are greater than 18 years of age**
b. **They present a valid state issued ID, passport, or military ID**
c. **They have not purchased more than 9 grams in a 30 day time frame**
d. **They have not purchased more than 3.6 grams in 1 day**
e. **Additionally, only a licensed technician or pharmacist may sell products containing pseudoephedrine.**
f. **For additional information regarding the sale or possession of pseudoephedrine products please** see appendix 4**.**

- **Legend drugs**

1. **Drugs which require a valid prescription in order to dispense.**
2. **Patients are not required to show ID when filling a prescription in this class**

- **Over-the-counter (OTC) drugs**

1. **Drugs which may be purchased without a prescription, often times after consultation with a pharmacist.**

f. **Pharmacy Technician Rules**

- **Allowable functions of pharmacy technicians**
- **Prohibited functions of pharmacy technicians**
- **See Appendix 3**

V. Security and Safety

a. **This section should be included in the policy and procedure manual at your pharmacy.**
b. **Department Security – explain procedure in case of robbery**
c. **Operation of Equipment**
d. **Waste Management – OSHA requirements in place if home health care involved with syringes/needles.**
e. **Fire Safety Procedures – fire extinguishers in place and operational**

f. **Emergency Procedures – tornado, robbery, natural disaster, etc.**
g. **Material Safety Data Sheet – MSDS – If pertinent to your pharmacy, contact wholesaler for proper instruction.**
h. **Loss prevention policies and procedures**

After successful completion of the initial training, Phase 1 (I-V), the trainee may apply for a pharmacy technician permit. Upon receipt of the permit, the pharmacy technician may begin Phase 2, OJT

Phase 2

(On-the-Job Training)

I. Pharmaceutical Vocabulary

a. **Terminology –** See Appendix 5

i. **General Terminology**

ii. **Pharmaceutical Terminology**

iii. **Medical Terminology**

b. **Abbreviations and Symbols –** See Appendix 6

i. **English abbreviations**

ii. **Latin abbreviations**

iii. **Metric abbreviations**

iv. **Common chemical symbols**

v. **Apothecary symbols**

II. Mathematical Terminology and Systems

a. See Appendix 7

b. Roman Numerals

c. Apothecary System

d. Metric System

i. **Weight**

ii. **Volume**

e. Household measurements

f. Decimals

g. Fractions

h. Percentages

i. Ratios

j. Other relevant mathematical measurements or systems

III. Drug Nomenclature

a. Chemical name: Usually the full systematic name for the substance.

b. Non-proprietary or Generic name: Convenient and concise name in the public domain, used instead of the often unwieldy chemical name when referring to a drug.

c. Brand or Trademarked name: the name assigned to a drug by its manufacturer.

IV. Classification of Drugs

a. Schedule: as described under the DEA (p.10)

b. Legend

c. Exempt

d. Other drug classifications

V. Pharmaceutical Dosage Forms

a. Liquid Dosage Forms

i. **Solution: preparation that contains one or several soluble chemical substances usually dissolved in water. Syrup contains sugar. Tincture contains alcohol.**

ii. **Suspension: preparation containing finely divided**

drug particles distributed somewhat uniformly throughout a vehicle in which the

drug exhibits a minimum degree of solubility. Must be shaken before use.

iii. **Emulsion: a dispersion in which the dispersed phase is composed of small globules of a liquid distributed throughout a vehicle in which it is immiscible. Must be shaken before use.**

b. Solid Dosage Forms

i. **Capsule**

ii. **Tablet**

c. Miscellaneous Dosage Forms

i. **Powder: a mixture of finely divided drugs and/or chemicals in dry form.**

ii. **Ointment: a semisolid preparation intended for external application.**

iii. **Cream: a semisolid emulsion of either the oil-in-water or water-in- oil type.**

iv. **Suppositories: solid dosage forms intended for insertion into body orifices where they melt, soften, or dissolve and exert localized or systemic effects.**

v. **Patch: a topically applied dosage for continuous release of a medicinal substance.**

vi. **Injectable: sterile, pyrogen-free preparations intended to be administered parenterally.**

vii. **Other miscellaneous dosage forms**

VI. Routes of Administration

a. Oral: by mouth

b. Parenteral: all methods of systemic administration other than by oral or rectal routes.

c. Topical: skin, mucous membranes, transdermal route (ointment, patches).

d. Oral Inhalation: administration of medication into the membrane of the lung by breathing deeply using a machine, metered-dose nebulizer, a turbo-inhaler or intermittent positive pressure breathing (IPPB) machine.

e. Nasal Inhalation/Spray: route can be topical to mucous membrane or absorption into blood stream.

f. Sublingual and Buccal: under tongue or in cheek sack. Medication dissolves in mouth and goes directly into blood stream.

g. Rectal: ointment or suppository administered. Direct blood flow, fast acting, or direct contact onto skin membranes.

h. Vaginal: used for direct action to area or as route to bloodstream.

i. Other routes of administration

VII. Materials Management

- **a. Ordering of Drugs**
- **b. Receipt of Drugs**
- **c. Accountability for Drugs**
- **d. Storage of Drugs**
- **e. Types of Drug Containers and Packages**

f. Labeling Requirements for manufactured drugs
g. Lot numbers
h. Expiration Dates
i. Inventory Control

THE 5 RIGHTS OF MEDICATION SAFETY:

1. RIGHT PATIENT
2. RIGHT DRUG
3. RIGHT DOSE
4. RIGHT ROUTE
5. RIGHT TIME

Always remember that you play a very important role in assuring

VIII. Drug Dispensing

a. Data Entry

i. **When accepting a new prescription, always note the patient's date of birth on the prescription. This helps the pharmacist verify that the right prescription gets to the right patient.**
ii. **Accuracy is a must.**
iii. **Avoid duplications by checking for previously entered information.**
iv. **Age is now required for prospective utilization review prescription information.**
v. **Never assume; if there is a doubt, ask the pharmacist.**
vi. **Never override a warning pertaining to a medication (i.e. drug allergy or drug interaction).**

b. Typing the Prescription Label

i. **A prescription is an order for a medication issued by a licensed prescriber. The prescriber will either write on the prescription blank or call the prescription into the pharmacy. Only the pharmacist or pharmacy intern may receive a**

Name **Date**
Address **DOB**

DRUG AND
STRENGTH SIG
QUANTITY

REFILL

telephoned prescription order, which must be transferred to a written from immediately.

ii. **Parts of a prescription:**

1. **Name and address of the prescriber**
2. **Name and address of the patient. Always double check spelling for correctness. Patient's address must appear on all controlled prescriptions.**
3. **Patients age or date-of-birth (DOB)**
4. **Date issued. Controlled prescriptions have a time limit on them depending on their schedule.**
5. **Name, strength, and dosage form of the drug prescribed. The prescriber may write the order in the generic or the brand name of the prescribed medication.**
6. **Quantity of tablets, capsules, volume of liquid, weight, or number of units to be dispensed.**
7. **The directions for use. "Sig" is a Latin abbreviation which means "mark thou". The directions are usually written using abbreviated forms of English or Latin or a combination of both.**
8. **Refill instruction. When no refill information is provided, the prescription cannot be refilled.**
9. **The signature of the prescriber. The prescription is not valid without the hand written signature of the prescriber.**
10. **DEA number. This number is issued to the prescriber by the federal DEA and must appear on all prescriptions for controlled dangerous drugs.**
11. **If the prescription does not contain all the information listed above, it is the obligation of the pharmacist or technician to obtain the information from the patient or prescriber before filling the prescription. Most computer systems will prompt the user to fill-in the appropriate spaces. Third party payers have taken over a large percentage of the pharmacy market. All techs should familiarize themselves with the insurance information necessary to handle claims properly in their place of business. See third party selection for additional information.**

c. Selecting the correct stock bottle

i. **Using good technique with attention to detail will eliminate mistakes and increase accuracy. An efficient and effective way to check your work is to use a system**

called "P-D-R" or pull- dispense-review. This system or whatever system the pharmacy utilizes should be an essential step in the routine when filling a prescription. Avoid pulling by familiarity or habit, but rather READ each label for each order. NDC (national drug code) numbers are on all legend drugs; they are a good checkpoint if

your computer system has the NDC number on the prescription receipt.

d. Accurately counting or pouring the appropriate quantity of a drug product

i. **Pull medication off the shelf and verify correctness.**

ii. **Enter the prescription into the computer/typewriter and prepare a label.**

iii. **Count the capsules or tablets. The procedure used most often is to use a counting tray and count by fives.**

iv. **The counted tablets/capsules should be pushed into the storage area on the left side of the tray. If there are any pills remaining on the tray they should be put back in the original container and the lid replaced.**

v. **Select an empty prescription vial from your stock and pour the counted medication onto the empty vial. Place a cap on the vial. A childproof cap must be used, unless patient specifically requests an "easy open" or "snap" cap. Selecting the proper vial size takes practice. Common sense is the best method of determining size. The vials range in size from 8-60 drams.**

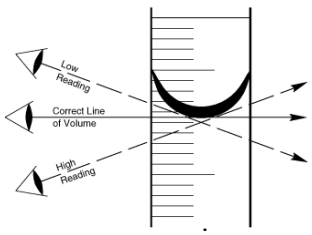
vi. **Always remember to keep the counting tray or device clean. The tray or device should always be cleaned after penicillin or sulfa is counted to prevent any reactions that could occur from transfer of the powder.**

vii. **Liquid medication prescriptions follow the same for steps 1 & 2. Then select an empty bottle of the appropriate size and pour the prescribed quantity into the amber dispensing bottle. The bottles are marked in ounces and milliliters. Bottles come in sizes 1-16 ounces.**

viii. **The label is now ready to be placed on the vial.**

e. Reconstituting the appropriate quantity of a drug product

i. **Certain medications are supplied as a dry powder which is to be reconstituted (converted to liquid form) by adding distilled water prior to dispensing. These medications are supplied in this form because potency decreases with time after reconstitution.**



Pull the medication and verify correctness.

Measure the required distilled water in a graduate or reconstitube.

iv. **The correct way to measure liquids is to measure from the bottom of the meniscus at eye level (see illustration to**

the left).

v. **For most of these suspensions, it is recommended to add half of the required water, then shake vigorously, then add the other half.**

vi. **After all water has been added, shake well again.**

vii. **The label is now ready to be applied.**

f. Selecting the Proper Container

i. **Safety closures are a result of the Poison Prevention Package Act passed in 1970. The Consumer Product Safety Commission is responsible for the enforcement and administration of the act. All legend drugs intended for oral dispensing by the pharmacist must**

be in a safety enclosure unless the prescribing physician or the patient specifically requests otherwise.

g. Affixing Auxiliary Labels, if indicated

i. **The pharmacist should instruct the Tech on what auxiliary labels to use. There are computer programs and wholesaler charts available.** See Appendix 9.

h. Preparing finished product for inspection and final check by pharmacist

i. Make your final check prior to presenting to the pharmacist. Compare the finished prescription with the original stock bottle one more time. Many errors can be corrected by self-checking.

IX. Third Party Processing

a. Terminology

i. **MAC:** **Maximum Allowable Cost**
ii. **AWP:** **Average Wholesale Price**
iii. **NABP:** **National Association of Boards of Pharmacy**
iv. **UCF:** **Universal Claim Form**
v. **Customer ID#:** **Patient Identification Number**
vi. **On-line adjudication:** **Confirmation via telecommunication**
vii. **Carrier ID#:** **Group number**
viii. **BIN:** **Bank Identification Number**
ix. **Deductible:** **The amount the patient must pay before insurance takes effect.**
x. **Copay:** **The amount the patient is responsible for paying.**

b. Claims Processing

i. **Must spell name exactly as on card**
ii. **Date-of-Birth must be correct**
iii. **Person code needs to be entered correctly**
iv. **Correct carrier and group numbers must be selected**
1. **NDC: Use same BIN # for all groups**
2. **Envoy: Assigns their own BIN # for each group**

X. Home Health Care/IV Admixture

a. Parenteral pharmacy technician regulation: The pharmacist must establish the procedures for parenteral products, verify the pharmaceutical constituents, the prepared label, and the final product.

b. Pharmacy technicians may perform functions involving the:

i. **Reconstitution of single dosage units that are to be administered to a given patient as a unit.**
ii. **Addition of one manufacturer's prepared unit if the unit is to be administered as one dose to a patient.**

c. Procedure Guidelines

i. **Aseptic technique: There are training videos that would be helpful (i.e., ASHP, School of Pharmacy Programs and others).**
ii. **Proper needle and hazardous waste disposal: OSHA guidelines.**
iii. **Safety procedures involving eye protection, spills, needle sticks, etc., must be addressed.**

iv. **Vaccinations and tests required if employee contacts patients in a home health setting.**

d. The home health practice is so unique that individual policy and procedures for your business should be in place and utilized.

The pharmacy technician must complete the Phase 2 (OJT) training within 90 days of receipt of their pharmacy technician permit.

مقدمة عن التدريب الميداني :

يعد التدريب الميداني للصيدلي ممارسة عملية وتجسيد للعلوم النظرية والتطبيقية التي تلاقها خلال فترة التحاقه بالبرنامج وإعداد ه مهنيا لممارسة مهنة الصيدلة بكفاءة واقتدار، وإكسابه المهارات المهنية للمهنة ويتم التدريب الميداني بإشراف القسم وفق مجاميع تنفذ التدريب الميداني في صيدليات المجتمع وصيدليات المستشفيات الحكومية والأهلية وصيدليات وشركات الأدوية في نطاق سكن المتدرب

ويعد التدريب الميداني حلقة مهمة لاستكمال متطلبات التخرج وضرورة أساسية لصقل مهارات الصيدلي ووقوفه على الواقع العملي لاكتشاف متطلباته وأخلاقيته والمشكلات العملية المختلفة واكتساب الحلول الناجعة لها وبإشراف وتقييم مباشر من القسم

المدونة الأخلاقية للصيادلة :

الصيادلة هم الممارسون الصحيون لمهنة الصيدلة ويحملون رسالة إنسانية لمساعدة المرضى والأطباء في الاستفادة المثلى من الأدوية بأمانة ومهنية تتبلور فيها المهارات العلمية والأخلاقية

يجب على الصيدلاني أن يعمل وفق الموجهات الأخلاقية التالية :

١. التطبيق العملي للعلم الصيدلاني بدقة وتمكن وعناية
٢. الأمانة المهنية والتواصل الفعال مع المرضى والأطباء والمؤسسات الصحية المختلفة .
٣. تقديم مصلحة المريض وجعلها فوق كل اعتبار .

٤. العدالة في توزيع الموارد الصحية على المحتاجين .
٥. الصيدلة مهنة ورسالة يؤديها الصيدلى لخدمة الفرد والمجتمع .
٦. احترام خصوصية وكرامة كل مريض.
٧. احترام القوانين الطبية النافذة والتصرف بنزاهة إزاء الاستخدام السلبي . للدواء والمستحضرات الطبية .
٨. احترام قيم وقدرات زملائه في القطاع الصحي والتعامل معهم بشفافية وأمانة.

أهداف التدريب الميداني :

١. يسعى التدريب الميداني لطلبة الصيدلة العامة لتحقيق الأهداف التالية
٢. تنمية مهارات الطلبة في المجال العملي الصيدلاني .
٣. تطبيق المهارات النظرية التي تلقاها الطلبة وبلورتها في صورة عملية تطبيقية .
٤. تنمية الشعور بالمسئولية لدى الطلبة أثناء ممارسة المهنية للصيدلة
٥. تعزيز مهارات حل المشكلات والتواصل مع الآخرين بكفاءة ومهنية
٦. إتاحة الفرصة للمؤسسات التي يتدرب فيها الطلبة لتقويم مخرجات البرنامج والمهارات المكتسبة .
٧. الاسهام في خدمة المجتمع في مجال الطوارئ والصحة العامة والتوعية الصحية .

آليات تصميم وتنفيذ التدريب الميداني

أولا : تصميم الدليل التنفيذي للتدريب الميداني

- تم تصميم الدليل التدريبي بناء على مرجعيات علمية وتجارب مختلفة من جامعات وكليات محلية وعربية وأجنبية وبلورتها في صورة إجرائية تطبيقية مع المقارنة بين مخرجات برامج التدريب تلك والاستفادة بشكل أساسي من التوجهات التدريبية المعاصرة والخبرات الأكاديمية والعلمية.

ثانيا : آليات التدريب الميداني

- يتم تنفيذ التدريب الميداني لطلبة الصيدلة وفق الإجراءات التالية :
- تشكيل لجنة أكاديمية من مجلس القسم والكلية المشرفة على البرنامج تشرف على رسم سياسات التدريب وإجراءات تنفيذه.
- تقسيم الطلبة إلى مجاميع تدريبية وتعيين مشرفين لهم.
- إبلاغ الطلبة بالفترة الزمنية للتدريب وإبلاغهم بمكان التدريب والمشرفين وعدد الساعات التدريبية وإجراءات التقييم .
- التنسيق مع جهات تنفيذ التدريب الميداني وصياغة مبادئ تمثل جوانب الاتفاق القانوني بين الطرفين وتحديد

أماكن التدريب وساعاته وأيامه.

- **تعيين مشرف من قبل الجهة التي تم التعاقد معها لاستقبال الطلبة المتدربين.**
- **تنفيذ التدريب وتقييم المتدربين وفقا لمعايير محددة من قبل المشرف المباشر من جهة التدريب ومتابعة مسؤول التدريب بالقسم.**

ثالثا : توزيع الساعات التدريبية

إجمالي الساعات التدريبية :

٥٧٦ ساعة تدريبية موزعة كالتالي: في مستوى ثاني الفصل الاول ٩٦ ساعة وفي الفصل الثاني ١٤٤ساعة وفي مستوى ثالث الفصل الاول ٩٦ ساعة وفي الفصل الثاني ٢٤٠ ساعة وفقا لمتطلبات وزارة الصحة اليمنية المسئولة على المعاهد الصحية.

آلية احتساب التقييم التدريبي للطلبة :

يعتبر التدريب الميداني ملحقا بالخطة الدراسية للطالب /ة ولا يضم التدريب الميداني ضمن السجل الأكاديمي للطالب /ة بل يمنح المتدرب شهادة مستقلة بالتدريب تعتبر ضمن متطلبات التخرج .

حيث تمنح الجهة التي تدرب فيها الطالب/ة إفادة خاصة باستكمال فترة التدريب مع سجل التقييم وفق المفردات الخاصة التي مارسها المتدرب /ة وبناء عليها تمنحه الكلية شهادة خاصة تسمى (شهادة اجتياز فترة التدريب

رابعا : توزيع الطلبة على مواقع التدريب

- **يتم توزيع الطلبة على مواقع التدريب من خلال :**
- **تحديد أماكن التدريب التي تم اختيارها والتعاقد معها وإتاحة الفرصة للمتدرب/ة لاختيار المكان المناسب له وبحسب الأعداد المحددة من الجهة التي سيتم التدريب فيها .**

- **تحديد المشرف الخارجي والداخلي لكل مجموعة**
- **النزول الميداني من قبل المجموعة والمشرف إلى موقع التدريب وتسليم الكشوفات الخاصة بالمجموعات واستمارات التقييم وسجلات التوقيع بالحضور والانصراف للمتدربين .**
- **مسئوليات لجنة الإشراف الأكاديمي على التدريب**
- **يتم تشكيل لجان الإشراف الأكاديمي على المجاميع التدريبية من قبل عمادة كلية العلوم الطبية ورئيس القسم وفقا للشروط التالية :**
- **يكون من حملة شهادة الدكتوراه في تخصص الصيدلة**
- **الخبرة العملية في الاشراف على التدريب الميداني**
- **مساعدة الطلبة وتذليل الصعوبات التي قد تواجههم وتعزيز جوانب القصور ومعالجتها أولا بأول**
- **عقد لقاءات دورية مع الطلبة اللذين يشرف عليهم**
- **توزيع استمارات التقييم واستخدامها بشكل دقيق ومتابعة المشرف اليومي الميداني واستلام التقارير اليومية منه والاحتفاظ بها في ملفات خاصة**
- **إجراء تحليل دوري لنتائج التقييم اليومي من قبل المشرف المقيم**

مسئوليات وضوابط الطلبة المتدربين :

- **الالتزام بالزي الرسمي للصيدلي .**
- **توقيع الحضور والانصراف اليومي في السجل المخصص لذلك .**
- **الالتزام بحضور الفترة الزمنية المحددة للتدريب .**
- **احترام اللوائح والقوانين السارية في الجهة التي يتدرب فيها .**
- **الحفاظ على ممتلكات الجهة التي يتدرب فيها .**
- **مسئوليات المشرف الميداني في الجهة التدريبية**
- **متابعة الحضور والانصراف للمتدرب/ة بشكل يومي .**
- **الإشراف المباشر على المتدربين من خلال الملاحظة الدقيقة**

تعبئة استمارة التقييم .

- **التواصل المستمر مع المشرف الأكاديمي وتزويده باستمارات المتابعة والتقييم بشكل أسبوعي وإيجاد الحلول للمشكلات الطارئة.**
- **تذليل الصعوبات التي تواجه المتدربين والرد على استفساراتهم**

- **الإشراف على تدوير المتدربين في عدة مواضع ومهام تدريبية**
- **الاحتفاظ بالوثائق والسجلات الخاصة بالتدريب**

إجراءات تقييم الطلبة المتدربين ومعايير التقييم وطرقه

- **يتم تقييم الطلبة المتدربين وفقا للاستمارة المعدة من الكلية والحرص على الدقة والأمانة في التقييم .**
- **إشعار المتدرب/ة بأنه يخضع لتقييم مستمر وفق معايير ومفردات تدريبية**
- **توظيف الملاحظة الدقيقة للمتدرب/ة وتشجيعه للإنجاز.**
- **سياسات الغياب والانضباط:**
- **يمنح الطالب درجة التقييم الميداني عند استكمال ساعات التدريب الميداني بشكل كامل .**
- **في حالة تغيب الطالب عن فترة التدريب لأكثر من ١٠٠ ساعة يحرم من الدرجة المستحقة على أن يستكمل فترة التدريب التي تغيب فيها في وقت لاحق مع ضرورة أن يكون الغياب مبررا.**
- **عند حصول ظرف طارئ يحول دون استكمال فترة التدريب يتم التنسيق مع عمادة كلية العلوم الطبية لوضع الحلول العاجلة لاستمرار عملية التدريب**
- **كل متدرب أخل بعمله التدريب الموكل إليه يتحمل كافة النتائج المترتبة على تقصيره أو إهماله.**

إلغاء أو حرمان الطالب من التدريب الميداني :

تلغى فترة التدريب الميداني للطالب في الحالات التالية :

- **إذا أبدى الطالب/ة المتدرب قصورا كبيرا ومنظورا في أثناء ممارسته للتدريب يؤثر بشكل مباشر على أدائه ينوه من قبل المشرف الميداني والمشرف الأكاديمي لتجاوز القصور وبذل الجهد الإضافي وفي حالة تعذر تحسن أدائه يوقف عن التدريب ويحال للكلية والقسم المشرف عليه**
- **في حالة وجود شكاوى مستمرة عن سلوكه التدريبي ومهنيته ومخالفته لأنظمة ولوائح العمل في الجهة التي يتدرب فيها**
- **إذا تكررت فترة غيابه وانقطع عن التدريب دون عذر مقبول .**

إجراءات الإرشاد والدعم الأكاديمي

- **تنفيذ لقاءات دورية مع الطلبة المتدربين**
- **الرد على اتصالات وتساؤلات الطلبة فيما يتعلق بالتدريب**
- **حل المشكلات التي قد يواجهها المتدربون/ ات وتقديم الدعم المناسب لهم .**

الجمهورية اليمنية

وزارة الصحة العامة

مكتب الشئون الصحية بمحافظة .....

نموذج استمارة التقييم

استمارة تدريب وتقييم طلبة قسم دبلوم الصيدلة

الأخ / المحترم

تحية طيبة وبعد

تهديكم ..... أطيب تحياتها متمنية لكم دوام التوفيق والنجاح في أعمالكم ..

نحيطكم بأن الطالب /ة ..... المتخرج من قسم الصيدلة بجامعتكم قد أنهى فترة التدريب الميداني لدينا للفترة من:

...../...../..... م إلى : ..../...../.....م

وكان مستوى التقييم كالاتي :

المعيـ	ممـ	جيد ـ	جـ	مقبو	ضعيـ
الالتزام بالحضور					
تعامله مع العاملين					
تعامله مع المرضى					
الالمام بطرق حفظ الأدوية					
المراقبة لتاريخ الانتهاء					
قراءة الوصفات الطبية وصرف الدواء					
استيعاب تعليمات العقاقير الطبية					
ترتيب وفرز الأصناف الدوائية بحسب النوع والشركة والاستخدام					
تقديم الارشادات الصيدلانية للمرضى					
تقييم مخاطر الدواء واتخاذ القرار					
الالتزام بأخلاقيات المهنة					
المستوى العام للمتدرب/ة					

المشرف المباشر المدير العام

5. Appendixes

APPENDIX 1

CONFIDENTIALITY OF PATIENT INFORMATION

The following is an example of a confidentiality statement that each employee of the pharmacy might be asked to sign, regarding confidentiality of patient records. It is suggested that each pharmacy use this statement, or develop one of their own.

UNDERSTANDING OF CONFIDENTIALITY

All employees of this pharmacy are required to read and agree to comply with the following statement applicable to confidentiality.

All information pertaining to customers or patients shall be maintained in the strictest of confidence. There shall be no disclosure of any patient information to anyone outside the pharmacy except as specifically authorized by the pharmacist in charge. Any disclosure to other employees within the pharmacy shall be strictly on a "need to know basis".

Records of patient information shall not be copied or removed from the premises except as specifically authorized by the pharmacist in charge. Individual patients shall be permitted to review and have copies of their own records only. For security reasons, such copying of records shall be only upon the specific authorization of the pharmacist in

charge. Release of such information to relatives of patients may be made only upon a signed release, signed by the patient themselves or their guardian.

Our customers and patients expect and deserve all patient records and information, medical or personal, to be conducted in a professional manner with due regard given to their rights of privacy. Any discussion regarding customers or patients between employees shall pertain only to information necessary to give appropriate health care services.

I, the undersigned employee, do herby state that I have read and understand the foregoing statement regarding this pharmacy's policy of confidentiality.

This also includes any information about business at this pharmacy.

Date _____ Signature _____

(Employee)

- **Pharmacy technician tasks**

Pharmacy technicians may perform the following tasks in a licensed hospital pharmacy facility in accordance with 535:15-7.2:

(1) **any tasks auxiliary supportive personnel are allowed to perform;**

(2) **count and/or pour medications;**

(3) **affix the prescription label to the final container;**

(4) **affix auxiliary labels to the container as directed by the pharmacist;**

(5) **assist the pharmacist in the management of the controlled dangerous substance (CDS) inventory. The pharmacist remains responsible for completeness and accuracy;**

(6) **fill "Modified unit dose distribution systems", "Automated dispensing systems" and/or "Unit dose distributions systems";**

(7) **prepackage and label multi-dose and unit-dose packages of medication as directed by pharmacist-established procedures for such, including selection of containers, labels and lot numbers, with provisions for the pharmacist to check the finished task prior to dispensing to the patient. (While a pharmacy technician may package and label the drug, the certification is the responsibility of the pharmacist.)**

(8) **perform bulk reconstitution of prefabricated non-injectable medication utilizing a pharmacist established procedure for the bulk reconstitution of prefabricated non-injectable medications.**

(9) **perform bulk compounding, including such items as sterile bulk solutions for small-volume injectables, sterile irrigation solutions, products prepared in relatively large volume for internal or external use by patients, and reagents or other products for other departments of the hospital facility. Such intermediate and large-scale compounding may be done by a pharmacy technician through the use of a procedural manual and a system of in-process and final checks and controls developed or approved by the pharmacist and which are carefully and systematically enforced.**

(10) **prepare parenteral products utilizing a policy and procedure that addresses the verification of the pharmaceutical constituents, the prepared label and the final product by the pharmacist.**

(A) **Pharmacy technicians may perform functions involving the:**

(i) **reconstitution of single dosage units that are to be administered to a given patient as a unit; and/or**

(ii) **addition of one manufacturer's prepared unit (whole or in part) to another manufacturer's prepared unit if the unit is to be administered as one dose to a patient.**

(B) **Pharmacy technicians may add a single ingredient in preparing parenteral products.**

(C) **Certified pharmacy technicians as defined in 535:15-5-2 may prepare chemotherapy and add multiple ingredients when preparing sterile products only following documented demonstration of appropriate competency to the Director of Pharmacy or his designated pharmacist on an annual basis.**

(11) **record patient or medication information for later validation by the pharmacist pursuant to procedures which prevent the information from being utilized in any way until it is validated by the pharmacist. Exempt from the necessity of pharmacist validation shall be records, such as financial, inventory control, etc., which can in no way affect the safety and accuracy of medication administration to patients.**

(12) **select prepackaged and pre-labeled doses of medication from storage areas and place and transport to the patient area such doses in containers bearing a patient's name in a unit dose distribution system or a modified unit dose distribution system if the pharmacist personally checks and verifies by signature or initial all patient medication before it is administered to the**

patient.

Pharmacy Technician and Supportive Personnel Rules

- **Supervision of pharmacy technicians**
  (a) **All tasks performed by pharmacy technicians must be in a licensed pharmacy in Yemen and must be accomplished under the immediate and direct supervision of a pharmacist who is currently licensed by the Board.**
  (b) **A pharmacy technician may perform certain non-judgmental functions of dispensing as enumerated in this Subchapter, provided that whenever the pharmacist leaves the prescription department, other than for in-pharmacy counseling of a patient, all dispensing functions listed shall cease.**
  (c) **A ratio of no more than two pharmacy technicians per supervising pharmacist on duty shall be maintained.**
  (d) **A pharmacy intern working in the pharmacy will not affect or change this ratio.**
  (e) **The pharmacist must certify, by reviewing, the completed prescription for accuracy and completeness before the prescription is released from the prescription department.**
- **Duties**
  (a) **The following tasks may be performed by auxiliary supportive personnel:**

(1) **retrieve prescriptions or files as necessary;**

(2) **clerical tasks such as data entry, typing labels and maintaining patient profiles;**

(3) **secretarial tasks such as telephoning, filing, and typing;**

(4) **accounting tasks such as record keeping, maintaining accounts receivables, third party billing and posting;**

(5) **inventory control tasks including monitoring, pricing, dating, invoicing, stocking pharmacy, and preparation of purchase orders; and**

(6) **help maintain a clean and orderly pharmacy.**

(b) **The following tasks may be performed by pharmacy technicians:**

(1) **count and/or pour medications;**

(2) **prepackage (e.g. unit dose) and properly label medications;**

(3) **affix the prescription label to the proper container;**

(4) **affix auxiliary labels to the container as directed by the pharmacist;**

(5) **reconstitution of medications (i.e. liquid antibiotics);**

(6) **bulk compounding, including such items as non-sterile topical compounds, sterile bulk solutions for small volume injectables, sterile irrigation solutions and products prepared in relatively large volume for internal or external use. Documentation of a system of in-process and final checks and controls must be developed or approved by the certifying pharmacist and carefully and systematically enforced;**

(7) **functions involving reconstitution of single dose units of parenteral products that are to be administered to a given patient as a unit, and functions involving the addition of one manufacturer's prepared unit (whole or in part) to another manufacturer's prepared unit if the unit is to be administered as one dose to a patient. The pharmacist must establish the procedures for parenteral products and certify the ingredients, label and finished product;**

(8) **any duties auxiliary personnel are allowed to perform; and**

(9) **assist the pharmacist in the annual CDS inventory. The pharmacist remains responsible for completeness and accuracy.**

(1) **The pharmacist must certify, by reviewing, the completed prescription for accuracy and completeness before the prescription is released from the prescription department.**
(2) **The pharmacist must provide patient counseling or drug information as necessar**

APPENDIX 2

NARCOTICS AND DANGEROUS DRUGS CONTROL

DRUG NAME & STRENGTH				Page #		BALANCE ON HAND	YEAR	
NUMBER	DATE	PATIENT NAME	PATIENT ADDRESS	(-) AMOUNT DISPENSED	(+) AMOUNT RECEIVED	BALANCE BROUGHT FORWAD	DISPENSER INITIALS	PHYSICIAN NAME

APPENDIX 3

TERMINOLOGY

ABSORPTION: process by which substances (including drugs) are taken up and are transported by the blood stream.

ADDICTION: pattern of compulsive drug use characterized by overwhelming involvement with the drug, securing its supply, and a high tendency to relapse after withdrawal.

ADDITIVE: a drug added to a solution intended for intravenous use (e.g. potassium chloride).

ADDITIVE RESPONSE: when the effect of two or more combined drugs is equal to the sum of their individual effects.

ADVERSE DRUG EFFECT: effects occurring other that the desired one. Adverse effects may be divided into two groups: side effects and toxicities. See side effect, toxicity.

ALLERGY: condition of unusual or exaggerated specific sensitivity to a substance harmless in similar amounts to average persons.

ANALGESIC: a drug that relieves pain (e.g. aspirin)

ANAPHYLAXIS: hypersensitivity reaction resulting from contact with a causative agent after prior sensitization to this agent. The mediating agent is histamine which may be released locally or systemically. Anaphylactic shock is rare and is often life threatening.

ANESTHETIC: an agent used to abolish sensation; may be local or general (e.g. lidocaine). ANORECTIC: a drug that depresses appetite (e.g. diethylpropion).

ANGINA PECTORIS: attack of chest pain caused by insufficient supply of oxygen to the heart. ANTACID: a drug that counteracts or neutralizes stomach acidity (e.g. calcium carbonate).

ANTIBACTERIAL: an agent that destroys bacteria or inhibits their growth or reproduction.

Compare: bacteriocidal, bacteriostatic.

ANTIBIOTIC: a substance produced by a living microorganism

capable of killing or inhibiting the growth of another microorganism (e.g. penicillin).

ANTICOAGULANT: an agent that prevents or delays the clotting of blood (e.g. warfarin sodium).

ANTIHISTAMINE: a drug that antagonizes some of the effects of histamine (e.g. chlorpheniramine maleate).

ANTI-INFLAMMATORY: an agent that counteracts or suppresses inflammation (e.g. aspirin). ANTIPRURITIC: an agent that relieves itching (e.g. diphenhydramine).

ANTISEPTIC: an agent that destroys or inhibits the growth of microorganisms and may be applied safely to living tissue (e.g. povidone-iodine).

ANTISPASMODIC: a drug that relieves or prevents spasms (e.g. atropine sulfate). ANTITUSSIVE: a drug that relieves coughing (e.g. codeine sulfate).

ANTIVIRAL: an agent that inhibits the replication of viruses (e.g. acyclovir).

AUXILIARY LABELS: small labels containing additional information, reminders, or warnings to the patient concerning drug use. Used to supplement the main prescription label.

ARRHYTHMIA: any irregular heart rate. ARTHRITIS: inflammation of the joints.

BENIGN: condition that does not threaten health.

CAUSTIC: an agent that causes burning and destruction of tissue upon contact. CHEMOTHERAPY: prevention or treatment of a disease by administering chemical agents.

CONGESTIVE HEART FAILURE: failure of diminished ability of the heart to supply blood to the tissues and organs of the body (CHF).

CYSTITIS: inflammation of the urinary bladder.

DECONGESTANT: a drug that relieves congestion, that opens blocked air passages in the nose and bronchi (e.g. pseudoephedrine HCl).

DECUBITIS ULCER: a sore caused by prolonged pressure on a patient's skin when confined to bed for a long period of time; also called a pressure sore or bedsore.

DEPENDENCE: altered state, produced by habitual drug use, where continued administration of the drug is necessary to prevent physical withdrawal symptoms or to maintain a psychological state of well-being.

DISINFECTANT: an agent that destroys microorganisms on inanimate objects (e.g. cresol). DRUG INTERACTION: potentially lethal adverse reaction between two or more medications. EXCRETION: process by which material is eliminated from the body.

EXPECTORANT: an agent that increases respiratory tract fluids and reduces the viscosity of the tenacious secretions.

GASTRIC: pertaining to the stomach. HEPATITIS: inflammation of the liver.

HERPES SIMPLEX: acute viral disease marked by groups of watery blisters, also called cold sores, on the skin and mucous membranes.

HORMONE: a substance, formed by one organ that is transported through the bloodstream to a distant site where it affects the function of another organ.

HYPERTENSION: high blood pressure.

HYPNOTIC: a drug that induces sleep (e.g. flurazepam HCl). HYPOTENSION: low blood pressure.

IMMUNITY: ability to resist and overcome infection.

INCOMPATIBLE: unsuitable to be combined or mixed with another agent or substance without resulting in an undesirable reaction.

INFECTION: invasion of the body by pathogenic organisms.

INFLAMMATION: reaction of tissue to injuries, characterized by pain, heat, redness, and swelling.

INFUSION: slow injection of a solution or emulsion into a vein or subcutaneous tissue. INHALATION: route whereby a drug is administered into the lungs or to the respiratory tract.

INTRADERMAL: into the skin; route of administration whereby a drug is injected into the skin.

INTRAMUSCULAR: into or within a muscle; route of administration whereby a drug is injected into a muscle (IM).

INTRATHECAL: into the subarachnoid space surrounding the brain and spinal cord; route of administration whereby a drug is injected into this space.

INTRAVENOUS: into or within a vein; route of administration whereby a drug is injected into a vein.

JAUNDICE: yellow appearance of skin, eyes, and other tissues resulting from deposition of bile pigment.

LAXATIVE: a drug used to stimulate evacuation of the bowels or to promote softer, bulkier stools (e.g. psyllium).

MALIGNANT: condition tending to become progressively worse if untreated. METABOLISM: biochemical alteration of substances (including drugs) within the body.

NARCOTIC: a drug that induces insensibility and relieves pain but is also addicting, causing dependence and tolerance (e.g. morphine sulfate).

NEPHRITIS: inflammation of the kidney.

OPHTHALMIC: relating to the eye; route whereby a drug is administered to the eye. ORAL: relating to the mouth; route whereby a drug is administed via the mouth.

OTIC: relating to the ear; route whereby a drug is administered into the ear.

PARENTERAL: 1) not intestinal; administration by any route other than orally. 2) the administration of drugs by injection; the most common injectable routes are intradermal, intramuscular, intravenous, and subcutaneous.

PASTILLES: see TROCHES

PATIENT MEDICATION PROFILE: record of all medication dispensed at a pharmacy to an individual patient or family.

PHARMACOLOGY: study of drugs and their effect on the human body. PHLEBITIS: inflammation of the veins.

PHOTOSENSITIVITY: sensitivity of the skin to light, usually due to the action of certain drugs (or plants and other substances).

PRESCRIPTION: order for a medication or device issued by a licensed prescriber such as a physician, dentist, veterinarian, optometrist, or podiatrist.

PRURITIS: itching.

RENAL: pertaining to the kidneys.

RESPIRATION: process by which an organism exchanges gases with its environment. It includes oxygen uptake and carbon dioxide release by breathing through lungs, diffusion through gills, and diffusion through body surfaces.

SEDATIVE: a drug that exerts a quieting effect on mental processes or nervous irritability (e.g. phenobarbital).

SIDE EFFECT: Often-undesirable pharmacological effects of a drug produced within therapeutic doses of the drug administered.

STERILIZE: to render objects, wounds, etc., free of microorganisms, usually by destroying those present with heat or by other means.

SUBCUTANEOUS: beneath the skin; route of administration whereby a drug is injected beneath the skin (sub-Q, SC).

SYMPTOM: specific functional evidence of disease observed by the patient.

SYNERGISTIC RESPONSE: when the effect of two or more combined drugs is greater than the sum of their individual effects.

TERATOGENIC EFFECT: induction of a defect in an unborn child (fetus) by a drug administered to the mother.

TOLERANCE: condition where a drug has a lesser than normal effect on the body, which may develop when the drug has been used repeatedly over a long period of time. When tolerance develops the dose of a drug must be increased to maintain a desired therapeutic effect.

TOXICITY: harmful or poisonous effect on the human body.

TOXIN: a poison produced by a living organism, often by a bacterium. TRANQUILIZER: a drug that relieves anxiety and tension (e.g. diazepam).

TROCHES: lozenges; small disk-shaped body composed of

solidifying paste containing an astringent, antiseptic demulcent drug, used for local treatment of the mouth or throat.

VACCINE: an agent administered to establish resistance to an infection, or disease (e.g. polio vaccine).

VASOCONSTRICTOR: a drug that causes narrowing of the blood vessels (e.g. phenylephrine HCl).

VASODILATOR: a drug that causes widening of the blood vessels (e.g. nitroglycerin) VERTIGO: dizziness.

VIRUS: submicroscopic agent capable of growth and replication only within living cells. Viruses cause many human diseases (e.g. HIV, Herpes Simplex).

APPENDIX 4

ABBREVIATIONS

aa	of each
ac	before meals
ad lib	as much as desired
ad	up to; to make
a.d.	right ear
a.m.	morning
APAP	acetaminophen
aq	water
a.s.	left ear
ATC	around the clock
au	each ear
bid, b.i.d	twice daily
BS	blood sugar
c	with
cap	capsule
cath	catheter
cc	cubic centimeter
CNS	central nervous system
DAW	dispense as written
DC, d/c	discontinue
E.C.	enteric coated
elix	elixir
e.o.d.	every other day
et	and
Gm.	gram
gr	grain
gtt, gtts	drop(s)
h, hr	hour
HCTZ	hydrochlorothiazide
hs	at bedtime
IBU	ibuprofen
IM	intramuscular
IV	intravenous
L	liter
liq	liquid
mcg	microgram
mEq	milliequivalent
mg	milligram
ml	milliliter
NMT	not more than non

rep, NR	do not repeat
NPO	nothing by mouth
NSAID	non-steroidal anti-inflammatory
NTG	nitroglycerin
N/V, N & V	nausea and vomiting
O2	oxygen, both eyes
od	right eye
os, ol	left eye
ou	both eyes
pc	after meals
PCN	penicillin
Ped	pediatric
p.m.	evening
po	by mouth
prn	as needed
q	every
qd	once daily
qid, q.i.d.	four times a day
qod, q.o.d.	every other day
qs	sufficient quantity
qt	quart
R	rectal
s	without
soln	solution
SIG	label such, let it be labeled
ss	half
stat	immediately
sup	suppository

susp **suspension**

syr **syrup**

sob **s** **hortness** **of** **breath** **subl,** **sbl,** **SL** **s** **ublingual**

tab **tablet**

TAT **until all taken**

TAG **until all gone**

TCN **tetracycline**

TID, T.I.D. **three times a day**

ung **ointment**

ut dict., UD **as directed**

URI **upper respiratory infection**

UTI **urinary tract infection.**

V, Vag **vaginal**

APPENDIX 5

MEASUREMENTS/MATHEMATICS

I. **Fractions**
   a. **Numerator/Denominator**
   b. **Lowest Common Denominator – used to combine multiple dissimilar fractions; find by testing successive multiples of the largest given denominator.**
   c. **Reduce fractions to lowest terms**

II. **Basic Algebra**

III. **Ratio and Proportion**
   a. **Ratio: expressed as a fraction but not reduced to lowest terms and ½**
   would be read as *1 to 2*, not one-half.

b. **Proportion: expression of the equality of two ratios**

i. **may be written *a:b = c:d, a:b::c:d, a/b = c/d***

ii. may solve for missing number

IV. **System of Weights and Measures**
   a. **Deci = 1/10**
   b. **Centi = 1/100**
   c. **Milli = 1/1000**
   d. **Micro = 1/1000000**
   e. **Nano = 1/1000000000**
   f. **Pico = 1/1000000000000**
   g. **Deka = 10 times**
   h. **Hecto = 100 times**
   i. **Kilo = 10000 times**

Useful Equivalents

1 inch = 2.54 **1 meter = 39.37**

1 fl. oz. = 29.57 mL **1 pint = 473 mL**
1 quart = 946 mL **1 gallon, US=3785 mL**
1 tsp. = 5 mL **1 gallon, UK=4545 mL**

1 pound = 454 **1 kg = 2.2 lbs**

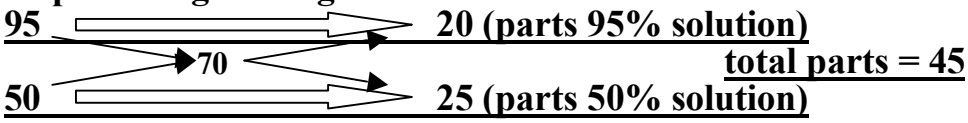
V. **Percentage Preparations**
   a. **Weight-in-Volume (w/v) = # of grams/100 mL**
   b. **Volume-in-Volume (v/v) = # of mL/100 mL**
   c. **Weight-in-Weight (w/w) = # of g/100 g**

VI. **Patient Compliance**
   a. **% Compliance Rate = # of days supply of medication/# of days since last Rx refill (x100)**

VII. **Temperature Conversion**
   a. **F = (9/5 x C) +32**
   b. **C = (F – 32) x 5/9**

VIII. **Dilution of Stock Solutions**

IX. **Alligation**
   a. **Method to solving problems that involve the mixing of solutions or mixtures of solids possessing different percentage strengths.**



X. Intravenous Solutions

APPENDIX 6

SAMPLE WORK SCHEDULE:

	In	Out
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		

APPENDIX 7

AUXILIARY LABELS

Auxiliary labels are used to remind patients of important aspects to their medications such as route of administration or possible side effects to watch for. Some pharmacies may have computer systems that print the appropriate auxiliary labels. Others, however, will need to be chosen from a stock of labels

APPENDIX 8

DEFINITION OF THE PRACTICE OF PHARMACY

❖ Definitions

- **"Practice of Pharmacy" means:**
  a. **the interpretation and evaluation of prescription orders,**
  b. **the compounding, dispensing, administering and labeling of drugs and devices, except labeling by a manufacturer, packer, or distributor of nonprescription drugs and commercially packaged legend drugs and devices,**
  c. **the participation in drug selection and drug utilization reviews,**
  d. **the proper and safe storage of drugs and devices and the maintenance of proper records thereof,**
  e. **the responsibility for advising by counseling and providing information, where professionally necessary or where regulated, of therapeutic values, content, hazards and use of drugs and devices,**
  f. **the offering or performing of those acts, services, operations, or transactions necessary in the conduct, operation, management and control of a pharmacy, and**
  g. **the provision of those acts or services that are necessary to provide pharmaceutical care.**

APPENDIX 9

❖ The following format can be utilized by student to make up the training report:

FORM-1: SCREENING

Date	Type of Interventions				Point of Screening (*R/F/D)	Description of intervention(s)
	Incomplete Prescriptions	Inappropriate Regimens	Inappropriate Prescriptions	Other		

❖ FORM-2: FILLING OF PRESCRIPTIONS (Include Labeling and Recording): At least 20 complete filling processes must be assessed by a senior pharmacist

Date of assessment	Patient Particulars	No. of Item in Prescriptions	Remarks	Name & Signature of Senior Pharmacist

❖ FORM-3: DISPENSING (Minimum 10 Prescriptions/ Day)

Date	Number of Prescriptions Dispensed	Name & Signature of Preceptor

❖ FORM-4: MEDICATION COUNSELING (INDIVIDUAL – Minimum 8 sessions/ week): **At least 4 counseling sessions must be directly observed and assessed by a senior pharmacist**

Date	Patient sRN	Counseling Based on The Types of Pharmacotherapy Management –minimum 2 patients/ type				Name & Signature of Preceptor
		Antidiabetics	Antihypertensives	Antiasthmatics	Others (Please Specify)	

❖ *FORM-5: Selected pharmaceutical products available in Yemen in the year* -----

(Min: 20 pharmaceutical products / week)

No.	Class	Proprietary Name	Example of trade names and dosage forms available in Yemen market
1			
2			
3			
4			
5			

6			
7			