**WASHINGTON STATE BOARD OF PHARMACY**

**Review Form**

**PHARMACY TECHNICIAN TRAINING PROGRAMS**

**Type of approval:** New Program [X]  Re-approval/Renewal: [ ] Date program expired: ________

**Program Type:** On-the-Job (OJT): [X]  Formal/Academic: [ ] Online: [ ]

**Facility/Institution name:** Tri-City Community Health  Credential # (if applicable): ________

**Location Address:** 721 S. Auburn

**Mailing Address (if different):** PO Box 1452 Pasco WA 99301

**Name of Program Director:** Regina Ahl, Pharm.D.  Phone Number: 509-543-8518

**Email Address for Director:** rahl@emgt-uch.org

**Corporate/Institution Contact Information:** TECU Director of Pharmacy: Richard Leigh 509-543-8516

**Staff Recommendation:** Approved

<table>
<thead>
<tr>
<th>Requirements for all program types:</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multicultural health awareness and education effective July 1, 2008 - New requirement RCW 43.70.645</strong></td>
<td>√</td>
<td>See page 5 of this form for complete info.</td>
</tr>
<tr>
<td>1. The training program must adequately prepare the trainee to pass an approved national pharmacy technician certification examination such that the trainee successfully passes prior to license application.</td>
<td>√</td>
<td>WAC 246-901-060 states proof of passing an NCCA-accredited national certification exam is required for licensure (effective 1/1/09).</td>
</tr>
<tr>
<td>2. Prior to starting an OJT training program in Washington, the trainee is required to show proof of high school graduation or a high school equivalency certificate, such as a GED.</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>3. Minimum of 8 hours of instruction is designated for review of relevant Washington state pharmacy law. This must include access to and use of the WA Pharmacy Commissioner's website to obtain the most current information. This is in addition to a review of all other applicable state and federal laws.</td>
<td>√</td>
<td>Out-of-state applicants must submit a completed 'Verification of Law' form that is signed off by a pharmacist who is licensed in WA (but does not have to reside here &amp; can have licenses in more than one state).</td>
</tr>
<tr>
<td>4. Trainee is registered with the Pharmacy Commission as a pharmacy assistant prior to starting an OJT program or an externship through an academic program in Washington state.</td>
<td>√</td>
<td>This does not apply to trainees who are in or have completed out-of-state technician training programs that are not physically located in WA.</td>
</tr>
<tr>
<td>5. Director of the program is a registered pharmacist. For WA</td>
<td>√</td>
<td>Program directors of WA state</td>
</tr>
</tbody>
</table>
6. Specify the names, license numbers, and training experience of the Director and all program instructors. Describe training responsibilities and functions.

7. Length of the program is 12 months or less for whatever is sufficient to meet the requirements in hours and/or credits for either OJT or academic programs. Note that there are 3 types of programs that are recognized: (1) OJT programs at licensed pharmacies; (2) academic programs; & (3) online programs. NOTE: Anyone who works in a pharmacy in WA must be licensed in WA. Trainees are licensed as pharmacy assistants and can only work as technicians.

8. The training and resource materials are current, relevant and are listed by title and publication date, with a description of how they will be used.

9. The minimum passing score for a final exam other than the PTCE or ExCPT is 75%. However, an option is to use proof of passing an NCCA-accredited national technician exam as your program’s final examination.

10. The Pharmacy Commission must be notified in writing or email prior to any significant changes to the program, including change in the Director, course content, and time frames.

11. All student-specific records must either be retained on-site and kept for a minimum of 2 years, as well as be made available within 72 hours upon request.

**Additional requirements for OJT programs:**

1. The program consists of 520 total hours of supervised work experience which includes: didactic instruction and 12 hours of individualized instruction provided when the trainer is not working 'on-line'. All work experience within this time frame must be supervised by pharmacists and be part of the training program requirements.

2. The program must also include training on job functions that are unique to a particular practice setting (eg, preparing parenteral products; extemporaneous compounding; providing long-term care services; etc.). These job functions must be documented on the ancillary utilization plans submitted for review.

**DoH/HSSA/OCS**

**JUL 16 2019**
3. The utilization plans for ancillary personnel are included, namely, pharmacy assistants and technicians. [See the web document on 'Developing a Pharmacy Technician Training Program' for resources.]

| Additional requirements for academic programs: |
|---------------------------------------------|---|---|
| 1. The academic program consists of a minimum of 2 quarters equal to 30 quarter credits (or equivalent in semester hours) and includes a mandatory externship of a minimum of 160 hours. | Yes | No |
| 2. The vocational program consists of a minimum of 800 hours of instruction and includes a mandatory externship of a minimum of 160 hours. | N/A |
| 3. A comprehensive training manual is provided and includes the following: list of faculty (names, licenses, training experience, & program responsibilities); institutional policies & procedures; description of the Advisory Committee functions & list of members; complete curriculum description & goals; training and testing methods; description of facilities (e.g., drug preparation labs, computer labs, etc.) & equipment used; description of the quality assurance program; and anything else relevant to the program and its administration and operations. | N/A |
| 4. The externship is described by practice site and number of hours spent at each site, as well as description of tasks, expectations and required outcomes. Students in externships are evaluated by their externship site supervisor and their academic program instructor (based on a midterm and final clinical evaluation form, as well as the student's work reports, attendance and performance). Students evaluate their externship experience and include a self-evaluation of each experience. The program's policy and procedure for dealing with negative evaluations of students and by students is included. | N/A |
| 5. Program requirements and expectations are included with a description of what constitutes misconduct and how it is handled. One example would be the criteria for expulsion from the program. | N/A |
| 6. If the vocational or academic institution is accredited by an accreditation organization and/or licensed in a state, provide this information. | N/A |

Additional requirements for online programs:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Online programs must meet the same requirements as academic programs.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>2. Program staff must be available to students on a 24-hour basis daily, with a policy &amp; procedure in place for this.</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

INCLUDE THE POLICY & PROCEDURE FOR THIS.
ADDITIONAL REQUIREMENTS

1. All programs are approved for a 5-year period and must be submitted for renewal before their expiration date. Typically programs that are submitted for renewal do not have to be presented at a board meeting for re-approval. However, if such a program is completely revamped, a determination will be made if formal board approval will be necessary, at which time your program would be notified.

2. For OJT programs offered through pharmacies that are licensed in Washington and for academic/vocational programs based in Washington, the documented director (or delegates) of a training program must sign the 'Director's Certification'. The director may designate delegates who can sign this section of the application on his or her behalf, but a letter must be submitted to the board by the director of the program stating who these delegates are and the effective dates. Any changes to this document must be submitted in writing. If either a director's or delegate's names are not on record with the board, this will cause delays in the processing of applications.

3. For pharmacies licensed in Washington, you must maintain an on-site file containing all documentation related to your approved technician training program, including your most current approved ancillary utilization plans. This documentation will be requested as part of the inspection process.

4. Anyone who works in a pharmacy in WA must be licensed in WA. Trainees must first be licensed as pharmacy assistants and can only work as technicians-in-training when they are being trained! Trainees cannot 'fill in' as technicians 'as needed'. Their work experience must be part of the approved training program. And, since proof of passing one of the NCCA-accredited national certification exams is a requirement for licensure, trainees should be preparing for an exam while they're in training. The training program should be preparing them to take an exam. The national exam should be taken sooner rather than later, meaning that your trainee can't be a tech-in-training indefinitely, especially after they have completed the training program. At the latest, trainees should be ready to take a national exam when they have just completed a training program.

5. Always remember to access the Board of Pharmacy website for the most current pharmacy technician or assistant applications, as the applications are periodically updated. The same applies for the most current information on Board of Pharmacy laws, rules, policies, guidelines, and the like.

6. Training programs that are reviewed as part of a specific applicant's application process will only be approved for that applicant. Out-of-state training programs that are interested in obtaining board approval must submit all the documentation requirements listed in the review form above.

Note: 'Formal' academic programs include the following settings: universities, community colleges, technical colleges, technical/community colleges, vocational/technical schools. These are institutional-based programs, whereas OJT programs are employer-based.

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Pharmacy Technician Education and Training Program Approval Form

The complete program of study including resource materials, content of instruction, and detailed program administration must accompany this application as well as a description of the criteria for admission or selection into the training program, and details on how the program will measure the student's proficiency.

Application Type:

- [X] Original
- [ ] Renewal

Check One:
- [ ] Association
- [ ] Corporation
- [ ] Federal Government Agency
- [X] Limited Liability Company
- [ ] Limited Liability Partnership
- [ ] Limited Partnership
- [ ] Municipality (City)
- [ ] Municipality (County)
- [ ] Non-Profit Corporation
- [ ] Partnership
- [ ] Public Hospital District
- [ ] Sole Proprietor
- [ ] State Government Agency
- [ ] Tribal Government Agency
- [ ] Trust

1. Demographic Information

<table>
<thead>
<tr>
<th>UBI #</th>
<th>6010413609</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Tax ID (FEIN) #</td>
<td>911386675</td>
</tr>
</tbody>
</table>

Legal Owner/Operator Name: Tri-Cities Community Health

Mailing Address: PO Box 1452

City: Pasco
State: WA
Zip Code: 99301
County: Benton

Phone (enter 10 digit #): 509-547-2204
Cell (enter 10 digit #): 
Fax (enter 10 digit #): 509-543-1978

Legal Name of Institution or Employer-based Program: Tri-Cities Community Health - East Kennewick Program

Physical Address: 721 S. Auburn

City: Kennewick
State: WA
Zip Code: 99336
County: Benton

Facility Phone (enter 10 digit #): 509-543-8518
Cell (enter 10 digit #): 
Fax (enter 10 digit #): 509-543-1978

Mailing Address: 721 S. Auburn St.

City: Kennewick
State: WA
Zip Code: 99336
County: Benton

Email address: pekuser@mytech.org
Web Address: www.mytech.org
2. Type of Program

Please check which type of pharmacy technician education and training program or school.

- [ ] Formal/Academic Training
- [x] On-the-job Training at a licensed pharmacy
- [ ] Vocational Training
- [ ] Military Training
- [ ] Other, explain

3. Contact Information

Name of Contact Person
Regina Ahl

Title
Pharmacy Manager

Physical Address
721 S. Auburn St

City
Kennewick
State
WA
Zip Code
99336
County
Benton

Email Address
rahl@mytch.org

Phone (10 digit #)
509-543-8518

4. Program Director Information

Name of Program Director
Regina Ahl

Title
Pharmacy Manager

Pharmacist Credential Number
PH 00065778

Preceptor Certification Number
PH 60654753

Physical Address
721 S. Auburn St.

City
Kennewick
State
WA
Zip Code
99336
County
Benton City

Phone (10 digit #)
509-543-8518

5. Additional Pharmacies and Program Directors

List all pharmacies associated with this training program.

<table>
<thead>
<tr>
<th>Pharmacy Name and Address</th>
<th>Pharmacy License #</th>
<th>Program Director</th>
<th>Pharmacist License #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tri-Cities Community Health Pharmacy (Richland)</td>
<td>PH4726057</td>
<td>Lydia Minnich</td>
<td>PH 49351</td>
</tr>
<tr>
<td>TECH Pharmacy - Pasco</td>
<td>PH5620472</td>
<td>Sara Dusky</td>
<td>PH 76400</td>
</tr>
<tr>
<td>TECH Pharmacy - East Kennewick</td>
<td>PH6072046</td>
<td>Regina Ahl</td>
<td>PH 65778</td>
</tr>
</tbody>
</table>

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6. Signature

I certify that I have received, read, understood, and agree to comply with state laws and rules regulating education and training programs. I also certify that the information herein submitted is true to the best of my knowledge and belief.

[Signature]
Program Director/authorized representative

[Signature]
Regina Ath
Print Name

[Signature]
Pharmacy Manager
Print Title

Date: 10/30/18

Additional Forms and Resources

- Pharmacy Webpage
- Guidelines to Implementation

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Regina Ahl, Pharm.D.
TCCH Pharmacy-East Kennewick
721 S. Auburn St.
Kennewick, WA 99336
509-543-8518
rahl@mytcc.org

October 1, 2018

Department of Health
Washington State Board of Pharmacy
PO Box 47863
Olympia, WA 98504-7863

Dear Department of Health:

Please find enclosed the proposed Pharmacy Technician On the Job Training Program for Tri-Cities Community Health Pharmacies. I have included a brief outline of the course and a copy of our ancillary personnel utilization plan.

Our technician trainees will be attending didactic courses at the Kennewick or Pasco Pharmacy locations. Hands on experience will be gained at any of our 3 clinic pharmacy locations.

If you have any questions regarding the proposed training plan, please feel free to reach out to me.

Thank you for your time and consideration in this manner.

Sincerely,

Regina Ahl, Pharm.D.
Pharmacy Manager

Tri-Cities Community Health Pharmacy - Richland
915 Goethals Dr
Richland, WA 99352-3527
TRNG.TG.60913497-PTEC-O

Cities Community Health Pharmacy - Kennewick
S Auburn St
Kennewick, WA 99336-5665
IG.TG.60913490-PTEC-O
Pharmacy Technician On The Job Training Program
Tri-Cities Community Health

Section I

Program Administrators:
1. Director
   a. Regina Ahl, Pharm.D.
      i. License number: PH00065778, Preceptor: PH60554753
      ii. Previous experience as instructor:
         1. Preceptor for Pacific University College of Pharmacy, 2014-2016
            a. Instructed second year pharmacy students in an IPPE
         2. Preceptor for On the Job tech training program offered by Walgreens
         3. Acted as mentor and trainer for staff at Walgreens Infusion/OptionCare as
            the Pharmacy Manager, 2010-2017
         4. Preceptor for 4th year WSU pharmacy students completing an institution
            rotation at Kennewick General Hospital
   iii. Role in training
          1. Administering didactic course work, quizzes, tests and oral discussion
          2. On the job training oversee

2. Other Instructors/Preceptors
   a. Lydia Minnick, RPh
      i. License Number: PH00039351, Preceptor: PH60007592
      ii. Previous experience as instructor
         1. Previously trained technicians and pharmacy students at Safeway
            pharmacies with an on the job training program
      iii. Role in training
            1. On the job training oversee
   b. Sara Dusky, Pharm.D.
      i. License Number: PH00070400, Preceptor: PH60753867
      ii. Previous experience as instructor
         1. Previously trained technicians and pharmacy students at Albertson's
            pharmacies with an on the job training program
      iii. Role in training
            1. On the job training oversee
   c. Richard Leigh, RPh
      i. License Number: PH00010756, Preceptor PH 60720083
      ii. Previous experience as instructor:
         1. Previously trained technicians and pharmacy students at Lourdes Medical
            Center Pharmacy, Safeway Pharmacy, and Albertson's Pharmacy in on the job
            training programs.
         2. Previously taught portions of the Pharmacy Technician training course
            offered through Columbia Basin Community College.
      iii. Role in training
            1. On the job training oversee
Pharmacy Technician On The Job Training Program
Tri-Cities Community Health

Section I

Program Administrators:
1. Director
   a. Regina Ahl, Pharm.D.
      i. License number: PH00065778, Preceptor: PH60554753
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          4. Preceptor for 4th year WSU pharmacy students completing an Institution rotation at Kennewick General Hospital
   iii. Role in training
        1. Administering didactic course work, quizzes, tests and oral discussion
        2. On the job training oversite

2. Other Instructors/Preceptors
   a. Lydia Minnick, RPh
      i. License Number: PH00039351, Preceptor: PH60007592
      ii. Previous experience as instructor
          1. Previously trained technicians and pharmacy students at Safeway pharmacies with an on the job training program
   iii. Role in training
        1. On the job training oversite

   b. Sara Dusky, Pharm.D.
      i. License Number: PH00070400, Preceptor: PH60753867
      ii. Previous experience as instructor
          1. Previously trained technicians and pharmacy students at Albertson's pharmacies with an on the job training program
   iii. Role in training
        1. On the job training oversite

   c. Richard Leigh, RPh
      i. License Number: PH00010756, Preceptor PH 60720083
      ii. Previous experience as instructor:
          1. Previously trained technicians and pharmacy students at Lourdes Medical Center Pharmacy, Safeway Pharmacy, and Albertson's Pharmacy in on the job training programs.
          2. Previously taught portions of the Pharmacy Technician training course offered through Columbia Basin Community College.
   iii. Role in training
        1. On the job training oversite
Facilities:

- Tri-Cities Community Health Pharmacy - East Kennewick
  721 S. Auburn St. Kennewick, WA 99336
  Phone: 509-543-8518
  License#: PHAR.CF.60721046
  Class A Pharmacy

- Tri-Cities Community Health Pharmacy - Richland
  915 Goethals St Richland, WA 99353
  Phone: 509-543-8519
  License#: PHAR.CF.60721057
  Class A Pharmacy

- Tri-Cities Community Health Pharmacy
  515 W. Court St. Pasco, WA 99301
  Phone #: 509-543-8520
  License #: PHAR.CF.60290772
  Class A Pharmacy

Resource Materials:


6. *Pharmacy Laws and Regulations*, Washington State Department of Health, Washington State Board of Pharmacy, P.O. Box 47863, Olympia, WA 98504-7863


8. Pharmacist Letter

9. UptoDate online access
Section III

Content of Instruction and Program Administration:

Pharmacy Technician Training Schedule:

Subject: Didactic lecture followed by hands on training:

1. Didactic lecture: Minimum of 5 classes that are at least 3 hours long,
   a. Topics in didactic course to follow:
      i. Orientation to Pharmacy Practice and Cultural Competency-completed during the first week of training
         1. Chapters 1, and 3-7 of technician manual
         2. Cultural Competency in Health Services and Care Guide
      ii. Basic Pharmaceutics- Completed during the 5th week of training
         1. Chapters 9-12 of technician manual
      iii. Pharmacy law-completed during the 2nd and 9th week of training
         1. Chapter 2 of technician manual
         2. Cultural Competency training
         3. Online access to the RCW and WACs
      iv. Pharmaceutical calculations-completed during the 13th week of training
         1. Chapter 14 of technician manual
      v. Instruction on Pharmacy technician skills for alternate sites of practice
         (hospital/infusion/specialty)
         1. Aseptic technique
         2. Compounding
   b. Didactic topic focus huddles:
      i. Beginning of each week a 15-20 minute huddle session to review topic focuses for the
         week for on the job training, review focus medications, and turn in quizzes/assignments
         from previous week

2. On the job training topic focuses schedule:

<table>
<thead>
<tr>
<th>A. Orientation to pharmacy practice</th>
<th>Weeks</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Pharmacy terminology and basic pharmaceutics</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>C. Pharmacy Law (Federal and State)</td>
<td>2/9</td>
<td>10</td>
</tr>
<tr>
<td>D. Pharmaceutical Calculations</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>E. Processing the Prescription/drug order</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>F. Stocking/ordering/inventory</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>G. Receiving merchandise</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>H. Inventory and Return goods procedure</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>I. Telephous procedure and communication</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>J. OTC drugs</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>K. Pharmaceutical compounding(reconstitution)</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>L. Pharmacy computer system</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>M. Insurance Billing and processing</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>N. Medical Equipment</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>O. Medication errors</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>P. Top 200 drug</td>
<td>All</td>
<td>20</td>
</tr>
<tr>
<td>Q. 340B program</td>
<td>3</td>
<td>40</td>
</tr>
<tr>
<td>R. Miscellaneous tasks/extra practice</td>
<td>Any</td>
<td>125</td>
</tr>
<tr>
<td>S. Didactic course work</td>
<td>See above</td>
<td>15 hours minimum</td>
</tr>
</tbody>
</table>

520 hours
Prerequisites for beginning training program:
1. High school diploma or GED
2. Employee of Tri-Cities Community Health Pharmacy
3. Pharmacy Assistant License for Washington State

Program Administration:
Weeks will overlap with training, total 6 months to completion of curriculum. A maximum of two technician students will be trained concurrently.

Instruction Process:
Training manual will include job description, Clinic policy and procedures, syllabus (training program objections, schedule: assignments/tests, and timeline), individual course/didactic outlines, and evaluation forms for: trainee, instructors, and program.

Student will be evaluated through:
1. Observation during “on the job training” and during didactic through question and answer.
   a. Offsite hours will be recorded with documentation that key tasks have been satisfactorily completed.
2. Quizzes (both written and oral) following each hour of didactic. (>75% pass rate)
3. Students will be evaluated every 4 weeks throughout the training program to assess progress and knowledge of topics.
4. Completion of the Pharmacy Technician Certification Exam with a passing score.

Documentation:
- Will be kept for minimum of 2 years for review by Board of Pharmacy with personnel file
- Proof of graduation from high school or GED
- Test, quizzes and written assignments will be kept in electronic form in the employees personnel file
- Student evaluations including pharmacy technician skills checklists
- Proof of passing score for Pharmacy Technician Certification Exam
Tri-Cities Community Health Pharmacies

Ancillary Personnel Utilization Plan

Pharmacy Technicians

A. Places, receives, un-packs and stores drug and supply orders and processes documentation of drug orders.

B. Files and retrieves various pharmacy records as required.

C. Files completed prescriptions alphabetically in the Will Call area for patient pickup.

D. Maintains assigned work areas and equipment in clean and orderly condition.

E. Hands out refills when specifically requested to do so by a pharmacist where no counseling is deemed necessary.

F. Handles nonprofessional tasks, such as:

   1. Calls from patients requesting a refill of a prescription by prescription number and/or drug name.

   2. Calls from a physician's office requesting refill authorization:

      a. Refill requests shall be made stating the patient's name, medication and strength, number of doses and date of prior refills.

      b. Any additional inquiries by the office or patient concerning the prescription must be referred to the pharmacist.

   3. Calls from any physician's office authorizing refills providing no changes in the prescription are involved.


   5. Calls regarding business hours or delivery services.

   6. Calls regarding the availability of goods and services—these might require transferring the call to another person.

   7. Inquiries from patients asking if their prescriptions are refillable or the number of refills left, etc.

   8. Calls dealing with the ordering of drugs and supplies from wholesalers and distributors.

G. Completion of non-professional medication synchronization activities.

   1. Offer calls to patients to sign up for medication synchronization.

   2. Review with patients which prescriptions are refillable or number of refills left, time to be filled, etc.

   3. Any changes to patient's prescription utilization must be referred to the pharmacist (i.e. prescriber or patient medication dosage change/discontinuation or professional questions.

   4. Calls to patients regarding waiting prescriptions.

   5. Processes prescription returns to stock.

H. Operates cash register and related front counter tasks.

12/02/2016
HEALTH

I. Counts and pours from stock bottles for individual prescriptions including prescriptions in compliance packaging. This function is performed under the direct supervision of a licensed Pharmacist and the accuracy of the prescription contents is checked and initialed by a licensed pharmacist. Returns stock bottles to shelf after the pharmacist has checked the prescriptions.

J. Reconstitutes restoration of original form of medication previously altered for preservation and storage by addition of a specific quantity of distilled water or provided diluent requiring no calculation. In 100% of the cases the accuracy of the technician is checked and the work initialed by a licensed pharmacist.

K. Enter prescription data into the computer and monitors label printing.

L. Transcribes orders—accuracy checked and initialed by a licensed pharmacist.

M. Reviews patient profile to retrieve specific clerical and other information as directed by a pharmacist.

N. Call to and/or from the physician’s office dealing with profile information where no interpretation is necessary, i.e., quantity, date last filled, price, etc.

O. Performs tasks under the pharmacist’s supervision such as obtaining individual prepackaged, labeled medications for prescriptions, obtains stock bottles for prescription filling.

P. Translates for pharmacist when necessary, in person or by telephone.

Q. Receives and processes facsimile and electronic prescriptions.

R. Prints patient profile reports requested by the patient, provider or legal authority in compliance with HIPAA regulations as directed by the pharmacist.

S. Processes miscellaneous third party insurance, Medicare, Medicaid, 340B claims and reports.
   1. Initial claims, reversals and prior authorizations.
   2. Calls or e-mails to third party processors as needed.
   3. 340B audit reports.

T. Prepares completed prescriptions for shipping or delivery and drug returns to the wholesaler or reverse distributor with a final check done by the pharmacist.

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JUL 16 2019

DOH/HSQA/OCS

12/02/2016
Ancillary Personnel Utilization Plan

Pharmacy Assistants

Placed, receives, unpacks and stores drug orders.
B. Files and retrieves various pharmacy records as required.
C. Files completed prescriptions alphabetically in the Will Call area for patient pick up.
D. Maintains assigned work areas and equipment in clean and orderly condition.
E. Hands out refills when specifically requested to do so by a pharmacist where no counseling is deemed necessary.
F. Handles nonprofessional:
   1. Calls from patients requesting a refill of a prescription by number.
   2. Calls from physician's office requesting refill authorization:
      a. Refill requests shall be made stating the patient's name, medication and strength, number of doses and date of prior refills.
      b. Any additional inquiries by the office/patient concerning the prescription must be referred to the pharmacist.
   3. Calls from a physician's office authorizing a refill providing no changes in the prescription are involved.
   5. Calls regarding business hours or delivery services.
   6. Calls regarding the availability of goods and services—these might require transferring the call to another person.
   7. Inquiries from patients asking if their prescriptions are refillable, with the number of refills left, etc.
   8. Calls dealing with the ordering of drugs and supplies from wholesalers and distributors.
G. Operates cash register and related front counter tasks.
H. Counts and pours from stock bottles for individual prescriptions. This function is performed under the direct supervision of a licensed pharmacist and the accuracy of the prescription contents is checked and initialed by a licensed pharmacist.
I. May generate a label for refill prescriptions only where there is no change in the prescription.
J. Prepares completed prescriptions for shipping or delivery and drug returns to the wholesaler or reverse distributor with a final check done by the pharmacist.
K. Translates for pharmacist when necessary, in person or by telephone.
Examples of Didactic to accompany manuals

Orientation to Pharmacy

Introduction to Pharmacy Practice
Chapter 2: Introduction to Pharmacy

Learning Outcomes
- Compare & contrast technician & pharmacist roles
- Understand licensing, certification, registration terms
- Describe advantages of formal training for technicians
- Describe a variety of pharmacy practice settings
- Describe characteristics of a technician

Learning Outcomes
- List tasks that pharmacy technicians perform in retail pharmacy settings
- Describe the concept of pharmaceutical care
- Define medication therapy management
- Explain why the use of compounding pharmacy & medical services is increasing

Key Terms
- Pharmacist
- Pharmacy Technician
- Certification
- Lecturer
- Registrar

Key Terms
- Accreditation
- Health-system pharmacy
- Home health care
- Medication Therapy Management (MTM)
- Pharmaceutical care

Basics
- Pharmacology: study of drugs & their actions
- Wound healing: understanding of how drugs are absorbed, distributed, metabolized, & excreted by body
- Pharmacometric preparation & dispensing of drugs

Roles of Pharmacy Staff
- Pharmacy technicians
  - Effect in practice on skills & responsibilities
  - Perform routine, day-to-day tasks that do not require judgment of pharmacist
  - Conduct yourself ethically
  - Maintain accurate inventory
- Pharmacists
  - Responsible for independent activities & performance
  - Engage in activities that require professional judgment
  - Assessing patients about their medications
  - Managing medication adherence in patients

Training
- Pharmacy Technician Certification Board (PTCB)
  - National certification program
  - Online multiple-choice examination
  - Certification examination
  - Training requirements for pharmacy technicians vary from state to state & from employer to employer

Hospital Technician Example
- May require high school diploma
- Experience & position related to level of responsibility
- Hospital pharmacy techniques (PPT)
- Hospital pharmacy equipment
- Hospital pharmacy operations
- Hospital medication administration
- Drug & patient assessment
- Prescription interpretation
- Infection control

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Advanced Pharmacist Training
- Effective Facilitator
- 1-2 year pre-pharmacy including programs
-药学 Opportunity to gain clinical experience
- seniors in hospital, ambulatory or community setting
- after completing a degree
- Effective Folks
- usually 3-5 years long
- Team up pharmacy research to enhance clinical pharmacy practice

Levels of Endorsement
- Accreditation
- Process of meeting its requirements with others
- Certification
- when one passes comprehensive examination that is held
- has public protection for accountability & skill
- Accreditation
- membership of one participates in the process of governance
- Registration
- process of seeking to being granted as a professional

Accreditation/Certification
- Accredited pharmacy education program
- Certification examination
- awareness of pharmacy practice
- benefits as a professional
- requires knowledge and understanding
- May provide advantage in terms of job responsibilities, salary & mobility

Technician Certification
- Scope of Pharmacy Technician: Function developed from
- medication history
- wholesale pharmaceuticals
- pharmacy services
- compounding
- practice
- Practice of pharmacy
- Certification Board (PTCE)
- a valid pharmacy technician certification program
- State's requirements for certification
- makes decisions based on information
- National implementer for certification at this time

PTCE
- Pharmacy Technician Certification Examination
- To take the examination, candidates must
- have high school diploma or GED
- submit appropriate application form
- pay fee
- complete at least 1 year of pharmacy
- pharmacy
- pharmacy practice

PTCE
- 4-hour, closed-book, computer based examination
- Multiple-choice questions
- Score is based on number of correctly answered questions

PTCE Tests in 3 Function Areas
1. Administering medication to patients 60%
   - dispensing medications
   - assessing patients
   - managing patients
   - determining dosage
2. Maintaining medication & inventory systems 30%
   - maintaining inventory
   - maintaining pharmacy
   - maintaining equipment
3. Participating in management of pharmacy practice 15%
   - business management, retail and marketing systems

Passing the PTCE
- Candidates who pass the exam may be designated
- Certified Pharmacy Technician (CPT)

To Maintain Certification
- Technicians must register every two years
- complete at least 40 hours of continuing education
- demonstrate knowledge of the practice
- participation in continuing education
- obtain certification
- at least three of continuing education must be related
- to pharmacy law

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ICPT

- Institute for the Certification of Pharmacy Technicians
- Focus on Pharmacy Technician Certification (ICPT)
- Comprised, comprehensive format
- Eligibility requirements include ICPT are similar to those of CPE

ExCPT - Question Categories

1. Regulations & Technician Duties (25%)
   - Techniques duties, general information, required information, related laws, regulations
2. Drugs & Therapy (25%)
   - Drug distribution, and therapy prescribed medication
3. Dispensing Process (50%)
   - Prescription information, processing/compounding, packaging, labeling, counting, packaging, compounding

Program Accreditation

- ASHP is the only organization that specifically accredits pharmacy technician training programs
- Vocational, technical, & community college
- Hospital
- Colleges nursing
- Military branches

Accreditation

- Accreditation ensures the formal training that pharmacy technicians receive
- Guidelines on how to take comprehensive pharmacy coursework
- Accredited programs meet minimum requirements and are subject to periodic reaccreditation

Goals of ASHP Accreditation

- Upgrading & standardization of technician training
- Assist in moving entering program
- Provide structure to help better develop as a profession
- Provide education with a competency tool
- Assist in advancement of professional development of pharmacy technicians

Professionalism

- Definition: Actively demonstrating attitudes, qualities, & behaviors that a person holds to be important knowledge
- Cultural norms of the healthcare system
- Values by which a number of a profession present themselves & communicate with others

Professionalism

- Code of Ethics for Pharmacy Technicians
  - Guidelines & principles for technicians
  - Practical exceptions of professional conduct include
    - Respect for patient's privacy
    - Keeping patient information confidential
    - Participation in continuing education courses
- Personal integrity, competence, & ethics
  - Personal integrity: maintains a sense of moral & ethical practices
  - Practices in accordance with the profession's code of ethics

Pharmacy Practice Settings

- Community Pharmacy
- Mail-Order Pharmacy
- Home Health Care
- Long-Term Care
- Specialty Pharmacy Services

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Introduction to Pharmacy Practice
Chapter 12: Pharmacy Law

Learning Outcomes
- Understand pharmacy federal & state laws, regulations & roles of state boards of pharmacy
- Discuss state pharmacy laws & regulations that govern pharmacy technicians
- Describe laws that regulate controlled substances
- Discuss restrictions on sale of products containing pseudoephedrine & ephedrine

Learning Outcomes
- Describe FDA approval process for drugs
- Discuss generic drug substitution
- Discuss differences between prescription drug labels for prescriptions & for patients
- Discuss patient privacy in the pharmacy & federal law that governs privacy of protected health information

Key Terms
- Benefit inventory
- Child-resistant packaging
- Controlled substances
- Drug Enforcement Administration (DEA)
- Initial inventory
- Legend drug
- Practice of pharmacy
- Prescription- monitoring program
- Regulation (related)

Introduction
- Pharmacy laws & regulations
- State requires pharmacists & pharmacies to be licensed
- Many states require pharmacy technicians to be licensed or registered
- If state pharmacy law or federal law has stricter requirements, the more strict requirement must be followed

Ethical Principles
- "Doing the right thing" - complying with laws & regulations
- Meeting ethical standards
- Honoring patient privacy & confidentiality
- Code of Ethics for Pharmacy Technicians
- American Association of Pharmacy Technicians (AAPT)

State Pharmacy Laws
- Local pharmacy, pharmacist, pharmacy technicians, and pharmacy practice
- Laws
  - Jurisprudence assessment
  - Enacted through state legislative process
- Regulations
  - Provide details to implement the law
- Local & adopted by state regulatory agencies
- Usually adopted through state board of pharmacy

State Laws & Rules
- Vary by state
- Uniform distribution for pharmacy technicians
- Must meet the requirement for education or certification
- May only perform the tasks specified in the state law
- Pharmacy technicians may not perform these tasks
- May perform procedures requiring the professional judgment, education, & training of a pharmacist

State Boards of Pharmacy
- Regulates the practice of pharmacy
  - Pharmacies
  - Paramedics
  - Pharmacy interns
  - Pharmacy technicians
State Board's Authority
- Licensing, discipline, and pharmacy practice
- Monitoring and controlling pharmacy regulations
- Investigating complaints
- Issuing licenses

Pharmacy Licensure
- Requirements for pharmacy licenses
- Renewal and initial registration
- Inspection
- Sanctions for non-compliance
- Actions against pharmacy operators

Categories of Pharmacy Licenses
(in some states)
- Retail
- Hospital
- Mail order
- Special
- Limited

Technician Requirements
- Pharmacy technician registration or license
- Postsecondary education
- Experience
- Criminal background check

General Qualifications for Techs
- Minimum age
- High school education
- Completion of training program
- An examination (pharmacy technician certification)

Patient Counseling
- Pharmacists are licensed to counsel patients on prescribed medications
- Pharmacists are trained to provide patient counseling

Controlled Substances Act
- Federal law regulates all facets of controlled substances
- Scheduling
- Distribution
- Dispensing
- Storage

DEA
- Drug Enforcement Administration
- Registration
- DEA numbers
- Controlled substances
- Annual registration

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**DEA Forms**
- DEA Form 222
- Used for renewing Schedule II controlled substances
- Includes physician information
- DEA Form 224
- Reporting of Drug Losses
- CV record must be separate from CR, CVG & CV records

**Controlled Substances**
- Schedules for controlled substances
  - Schedules I, II, III, IV, and V
  - Based on criteria
  - Potential for abuse or addiction
  - Schedule IV
  - Schedules of drugs demonstrate level of control

**Schedules**
- Schedule I (C1)
  - High potential for abuse
  - High medical value
- Schedule II (C2)
  - High potential for abuse
  - High medical value
- Schedule III (C3)
- Schedule IV (C4)
- Schedule V (C5)

**CV Rules in Some States**
1. Substance is not a prescription drug
2. Pharmacist must approve the sale
3. Purchaser is at least eighteen years of age
4. Pharmacy must maintain records of sales

**Schedules (Cont)**
- Schedule III (C1)
  - High potential for abuse
  - High medical value
  - Schedule IV (C2)
  - High potential for abuse
  - High medical value

**Labeling of Controlled Meds**
- For controlled substances, packaging
- Must be tamper-resistant
- Includes patient information
- Includes pharmacist and provider information

**Dispensing Controlled Meds**
- Control and storage of drugs
- Patient's name and address
- Date, time, and quantity
- Drug name, strength, dosage form, and quantity
- Number of authorized refills
- Possession of controlled substances

**Dispensing Controlled Meds**
- Controlled substances require specific information
- Date
- Patient's name and address
- Prescription number
- Dosage form
- Drug name
- Strength
- Number of authorized refills
- Possession of controlled substances
CII Requirements
- Need written prescription signed by practitioner
- Exemptions
  - Emergency
  - Physician-administered in hospital
  - Hospice
  - Addiction Treatment Programs
  - Schedule II prescriptions may be refilled for:
    - Pain controlling in long-term facility
    - Paraplegic

Refills of Controlled Drugs
- Schedule II & IV prescriptions
  - limited to 90 days within 6 months
  - Schedule II prescriptions
    - may be refilled once after 5 years
    - Have 9 month time limit on refills
  - Schedule II prescriptions
    - may not be refilled

Transfer of Prescriptions
- Schedule II - not transferable between pharmacies
- Schedule II, IV, V - may transfer for 1 refill
  - F acet DF guidelines
  - Restrictions online/computer system for chains
  - may transfer Schedule II, IV prescriptions up to max. 3 months of refills

Records for Controlled Drugs
- Addict's name, complete & accurate records for controlled substances
- intimately, accurately, documented, as obtained
- CII & IIU reporting required
- Federal requirements apply to
  - close controlled substances
    - for any person
  - form should be readily available for DEA inspection

Monitoring Programs
- Many states have program in place
- Physicians report controlled substance prescriptions to designated shared electronically on periodic basis

Monitoring Programs
- Information reported:
  - patient information
  - prescription information
  - pharmacy information
  - prescription history
  - Purposes:
    - to prevent diversion
    - to reduce abuse
    - to reduce non-medically appropriate use
    - to identify potential patient that may benefit from drug abuse treatment programs

Ephedrine & Pseudoephedrine
- Schedule III upon sale
- pressure drops in to pharmacists
- Colorado Methamphetamine Control Act of 2005
  - no limit on sales
  - 3.5 grams or 100 tablets/box (schedule III)
  - 1 gram in 30 unit package
  - information is available at

Limitation of Sales
- Product not available for public access
- Purchaser must sign receipt
- Federal law limits sales
  - 2.5 grams or 100 tablets/box (schedule III)

Brand & Generic Drugs
- FDA approves all drugs as safe & effective
- FDA requires new drug application (NDA)
- NDA
  - information about drug
  - studies from abuse
  - abuse potential
  - abuse treatment measures
  - abuse treatment measures
  - abuse treatment measures
  - abuse treatment measures

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NDA
- FDA reviews NDA in 2-3 years
- Whether drug is safe & effective
- Benefits of drug outweigh potential side effects
- If proposed labeling is appropriate
- Whether methods used in manufacturing are adequate to ensure quality of drug
- Companies market drugs with trade or brand name

Example of Brand/Generic
- United States
- Generic
- Name of drug
- Generic equivalent
- Whether marketed under only one trade name
- FDA approval of generic equivalent

Generic Equivalents
- Same molecule
- Intended use
- Dose form
- Strength
- Formulation
- Most automatic/least expensive drug application (NDA)
- Do not need to specify drug label
- Generic drug has different appearance
- Drug is distributed under generic name but brand name

Generic Drug Substitution
- May substitute generic for brand
- Generic substitution depends on state
- Generic substitution regulated by state
- State laws & regulations for generic substitution
- Decrease in price, increased availability
- Patients may request brand or generic drug
- Prescription may be required to substitute generic for brand

Orange Book
- Approved drug products with therapeutic equivalence
- List of therapeutic equivalents
- FDA list of therapeutic equivalents
- Physicians use Orange book to check generic equivalents
- Not all drugs have generic equivalent

Manufacturer Label Includes:
- Name & address of manufacturer
- Drug name
- Strength
- Dose form
- Directions for use
- Expired or quantity
- FDA schedule (if appropriate)

Manufacturer Label includes:
- "Rx Only" or "prescription drug" on prescription drugs
- "Over-the-counter" or "OTC" over-the-counter drugs
- "Controlled Substances" without prescription
- "NDC [National Drug Code]" must be on label
- Package insert must be attached to container

Package Insert Includes
- Indications for use
- Dosage and administration
- Precautions, warnings, precautions, contraindications for use
- Bioavailability & drug interactions
- Patient instructions
- Storage & handling
- Available combination of NDC..."}

Drug Information for Patients
- Consumer medicine information (CMI)
- Prescription drug label (PDL)
- Only for over-the-counter drugs
- Therapeutic & route of administration
- Precautions specifically for patient
- Medication Guide: dose, benefits
- Most important information
-.gateway.gov/OrangeBook/OPHP/medcano

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OTC Drug Labeling
- Drug name
- Total quantity
- Unit for use
- Recommended dose & frequency
- Who should or should not take the medication
- Side effects & precautions
- Drug interactions
- active ingredients, use, warnings, directions for use
- Expiration date

Poison Prevention
- Poison Prevention Packaging Act of 1970
- Poison proof packaging
- Powdered tablets are unsuitable
- Allow pets to eat
- Consumers may request child-resistant packaging
- Exceptions
- tablets, aspirin, ibuprofen tablets
- oral suspension (infant, adult peds)

Patient Privacy
- HIPAA
- Health Insurance Portability & Accountability Act (HIPAA)
- State
- Laws and rules vary from state to state
- Applies to health care providers
- Includes disclosing patient information to non-nurse
- protection of privacy of pharmacy communications with and about patients

PHI
- Protected Health Information
- Examples of pharmacy PHI
- pharmacy prescription records
- computer records
- prescription control files
- pharmacy staff members that identify the patient
- communications about patients' prescriptions & health care treatment

Allowable Disclosures
- When necessary to provide patient health care services
- Example
- Refilling prescriptions
- patient treatment
- Billing for pharmacy services
- Managing patient

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**Basic Pharmaceutics**

**Foundation Knowledge and Skills**
Chapter on Drug Classification and Pharmacologic Actions

**Learning Outcomes**
- For major classes of drugs
- Identify common drug names for each classification
- Describe actions (Species-specific use)
- Describe side effects or nuisance adverse effects
- List special precautions

**Key Terms**
- Agonist
- Antagonist
- Adrenergic
- Adrenergic Blocker
- Beta-blockers
- Hypotension
- Hypertension
- Peripheral vasodilator
- Thrombosis

**Section 1: Body Systems**

**Drugs for Nervous System**
- Antiepileptic Agents
- Psychotropic Agents
- Antidementia Agents
- Multiple Sclerosis Agents
- Drugs to Treat Headaches/Migraines
- Drugs to Treat Anxiety
- Drugs to Treat Mood Disorders
- Antidepressants

**Drugs for Nervous System**
- Tricyclic Antidepressants
- Monoamine Oxidase Inhibitors (MAOIs)
- Selective Serotonin Reuptake Inhibitors (SSRIs)
- Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs)
- Monoamine Oxidase
- Drugs for Bipolar Disorder
- Anti-Parkinson Agents (Antiparkines)
- Antipsychotic Agents

**Drugs for Nervous System**
- Sedatives & Hypnotics
- Drugs to Treat Attention Deficit Hyperactivity Disorder (ADHD)

**Cardiovascular System Drugs**
- Calcium Channel Inhibitors
- Beta-Blockers
- Diuretics
- Antithrombotics
- Antihypertensive

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Respiratory System Drugs
- Bronchodilators
- Corticosteroids
- Other Agents for Treating Asthma
- Cough and Cold Products

Musculoskeletal System Drugs
- Osteoporosis Agents
- Anti-Inflammatory Agents
- Selected Steroidal Derivatives
- Analgesics

Endocrine System Drugs
- Insulin
- Oral Antidiabetic Agents
- Thyroid Agents

Immune System Drugs
- Antibiotics
- Needle Contaminants
- Vaccines

Gastrointestinal System Drugs
- Aminosalts
- 1-Butanedioic-5-Fluorouracil Antagonists
- Proton Pump Inhibitors
- Anti-Diarrheal (Antidiarrheal) Agents
- Agents to Treat Inflammatory Bowel Disease (IBD)
- Antidiarrheals
- Laxatives

Urinary System Drugs
- Operative Urology Agents

Other Body Systems Drugs
- Cystitis
- Medicaments for Treating Constipation
- Medicaments for Treating Diarrhea
- Medications for Treating Dry Eyes
- Cilostat
- Topical Agents

Section 2:
Women's and Men's Health

Women's Health Drugs
- Contraceptives
- Facility Agents
- Hormone Replacement Therapy

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Section 4: Hematologic System Drugs
- Blood Products
- Anticoagulants and Thrombolytics
- Thrombolytics

Chemo Classifications
- Antibiotics
- Antibiotics
- Chemotherapeutics
- Anticancer Inhibitors
- Biologic Response Modifiers
- Targeted Complementary (Passive)
- Herapeutics
- Immunomodulators

Chemo Classifications
- Antibiotics
- Antibiotics
- Chemotherapeutics
- Anticancer Inhibitors
- Biologic Response Modifiers
- Targeted Complementary (Passive)
- Herapeutics
- Immunomodulators

Section 5: Hematologic and Dietary Supplements

Vitamins
- Involved in cellular chemical reactions & essential to
  - normal growth
  - maintenance & function
  - Vitamin D synthesized by body with sunlight
  - all nutritional deficiencies cause
  - Recommended dietary allowance (RDA)
  - fat-soluble or water-soluble
  - Fat-soluble vitamins: A, D, E, K

Vitamin Synonyms
- Vitamin A = Retinol
- Vitamin D = Cholecalciferol
- Vitamin D = Tocopherol
- Vitamin B = Thiamine
- Vitamin B = Riboflavin
- Vitamin B = Niacin
- Vitamin B = Pyridoxine
- Vitamin B = Pantothenic Acid
- Vitamin B = Biotin
- Vitamin B = Folic Acid
- Vitamin B = Biotin
- Vitamin B = Thiamin

Minerals
- Constituents of tissues, hormones, vitamins
- Essential to
  - muscle contraction
  - nerve conduction
  - water and acid balance
  - Oxygen in blood to sugar exchange
  - Calcium, phosphorus, potassium, chloride, magnesium, sulfur
  - Trace elements
    - Iodine, iron, copper, selenium, cobalt, molybdenum

Minerals
- Minerals administered as single entities
  - selenium
  - iron
  - phosphorus
  - magnesium
Other Dietary Supplements
- Complimentary alternative medicine (CAM)
- Incorrect belief that natural is safe
- Yields of the population using CAM
- Immune system modulator (Echinacea)
- Energy vitality CAM (ginseng, caffeine)
- Weight loss CAM (caffeine, ginseng, bitter orange)
- Women's health CAM (calcium, soy)
- Depression CAM (St. John's Wort)
- Menopausal CAM (black cohosh, Dong Quai)
Percentages
- Percentages are blends of fractions & decimals
- Percentage means "per 100"
- Percentages can be converted to fractions by placing
  denominator at 100
  * 100
- Percentages convert to decimals
- Remove 2 digits & move decimal point two places to the
  left
- Example: 25% = 0.25

Ratios and Proportions
- A ratio shows relationship between two items
- Example: 24 mg of drug is required for each
  kilogram of patient weight (mg/kg)
- Used as "inpatient medication"
- Prop. is statement of equality between two ratios
- U.s. units line up correctly
  1 gram equals 1000 mg
  1 liter equals 1000 ml
  Use both units of measurement
- May need to convert units to make these match

Proportion Example
- Standard dose of amoxicillin is 40 mg per kg of
  patient weight
- If patient weighs 32 kg, what is correct dose for
  this patient?
- Set up proportion:
  \[
  \frac{40 \text{ mg/kg}}{1 \text{ kg}} = \frac{x \text{ mg}}{32 \text{ kg}}
  \]
- x represents unknown value
  (In this case, number of mg of drug in dose)

Solve the Proportion
- Using algebraic property
  \[
  \frac{40 \text{ mg/kg}}{1 \text{ kg}} = \frac{x \text{ mg}}{32 \text{ kg}}
  \]
- Solve for x
  \[
  x = \frac{40 \times 32}{1}
  \]
- Check answer by substituting both ratios by x:
  \[
  \frac{40 \times 32}{1} = \frac{x \times 32}{32}
  \]

Completing the Problem
- Using constant (kg) to get this equation:
  \[
  \frac{40 \text{ mg/kg}}{1 \text{ kg}} = \frac{x \text{ mg}}{32 \text{ kg}}
  \]
- Therefore, answer is 1280 mg
- A patient weighing 32 kg receiving 40 mg/kg should
  receive 1280 mg

Metric System
- Most widely used system of measurement in world
- Based on multiples of ten
- Decimal units used in healthcare:
  * meter (length)
  * liter (volume)
  * gram (mass)
- Relationships among these units:
  * 1 liter of water occupies 1 cubic centimeter & weighs 1
  gram
  * 1 ton = 1000 kilograms

Metric Prefixes
- "Milli" means one thousandth
- 1 milliliter is one thousandth of a liter
- Credible medications are usually mg or kg
- Liquid medications are usually ml or L

Metric Conversions
- Some units represent type of measure
- Metric relationship & dosage prevention
  * 1000 grams = 1 kg
  * 10 productive = 1 unit
  * 1 milligram is some times in kg as a gram
  * 1 gram is some times in kg as a milligram
  * Convert mg to kg: 1 mg = 0.001 kg
  - Connecting can be as simple as moving decimal point

Other Systems in Pharmacy
- Apothecary system
  * Developed by Greeks for dispensing medicines
  * Has historical significance & has largely been replaced
  * The units are ounces, grains, drams, etc.
  * Used using traditional methods
- Units using metric systems
  * Apothecary units still used in community pharmacy
  * Common to pharmacy measures of water
  * Grice is approximately 0.066 ml
  * Dram is approximately 0.6 ml
Other Systems in Pharmacy
- Apothecary System
- 1 dram = 1/8 ounce
- 1 pound = 16 ounces
- 1 pound = 453.6 grams
- 1 fluid ounce = 30 ml
- 1 gallon = 3.785 liters
- 1 gallon = 128 ounces

Conversions
- 1 gallon = 4 fluid quarts
- 1 fluid quart = 2 pints
- 1 pint = 2 cups
- 1 cup = 8 fluid ounces

Common Conversions
- 1 cm = 1 inch
- 1 kg = 2.2 pounds
- 1 g = 15.432 grains
- 1 mL = 0.0352 fluid ounces
- 1 gram = 0.0352 fluid ounces
- 1 liter = 33.814 ounces

Household Measures
- 1 teaspoon = 5 ml
- 1 tablespoon = 15 ml
- 1 cup = 236.5 ml

Conversions
- 1 km = 0.6214 miles
- 1 mile = 1.6093 km
- 1 yard = 3 feet
- 1 foot = 12 inches

Military Time
- 24 hours is divided into 24 hours
- 12:00 am = 00:00
- 12:00 pm = 12:00

Body Surface Area (BSA)
- Body surface area is calculated using the following formula:
- BSA = (weight in kg) ^ 0.425 / (height in cm) ^ 0.725

Patient-Specific Calculations
- These examples are patient-specific calculations
- Ideal body weight
- Body mass index

Ideal Body Weight (IBW)
- IBW (kg) = (ideal weight in lbs) / 2.2

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**IBW Example**
- Calculate IBW for 35-year-old male @ 6'0" tall
- Formula: IBW (kg) = (height - 101) x 2.3
- IBW = 75.8 kg

**Body Mass Index (BMI)**
- Measure of body fat based on height & weight
- Determine if patient is
  - underweight
  - normal weight
  - overweight
  - obese
- BMI is not generally used in medication calculations

**Key Pharmacy Calculations**
- Pediatric dosage determined by child's weight
- Example: dicyclomine hydrochloride 5mg/kg per day
- Convert weight to the appropriate units
  - 56 kg
  - 274 mg

**Days Supply**
- Deduct duration of medical to determine
- how much medicine to dose
- how many days medication will be given
- Example:
  - Diclofenac 50 mg tab. for 5 days
  - 2 tabs/day available
  - dose is 100 mg a day (2 x 50 mg tablets)
  - given for 5 days, no. of tablet/day = given for 5 days = 10 tablets

**Concentration & Dilution**
- Medications may be a solids added together
- percentage strength is necessary as weight in weight
- Example:
  - Intravenous solution (10% w/v sodium chloride)
  - concentration: 100 ml of 10% sodium chloride
  - dilution: 100 ml of 10% sodium chloride

**Standard Solutions**
- To determine how much drug to dissolve in % of EqW
  - weight (milliliters) to dissolve (water) solution (mL)
  - 150 mg dissolved in 100 mL water

**Alligation Method**
- It may be necessary to mix concentrations above and below desired concentration to obtain desired concentration
- Visualize alligation as a designated box

**Alligation**
- Add 50% solution to obtain 30%
Alligation
- Add 5% and 6% to obtain 9%
- Subtract respective parts of each
- Add 6 parts of 9% solution to 1 part of 3% solution
- Total parts = 9 parts

Another Solution
- Add the ratio of the solutions to obtain the mixture
- Incidence between the two concentrations
- C1 x V1 = C2 x V2
- No need to invert these values to solve for the x

Specific Gravity
- Specific gravity is ratio of weight of substance to weight of same amount of water
- Specific gravity of water is 1.000
- Specific gravity of alcohol is 0.800
- Generally, tools do not appear with specific gravity
- In pharmacy calculations, specific gravity & density are used interchangeably
- Specific gravity = weight of substance / volume

Chemotherapy Calculations
- Systematic methods important in chemotherapy
- Effective medications calculated for effective
- Effective: effective dose divided by 10, effective to effective dose
- Patient is 75-year-old man weighing 75kg
- Standing X-ray:
- What is the dose of chemotherapy for this patient?

Solution
- Set up equation
- Ordered dose of chemotherapy: mg/m^2
- Body surface area: m^2
- weighing: kg
- Young’s rule: both sides by mm
- The correct dose of chemotherapy is mm

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Introduction to Pharmacy Practice

Chapter 1 • Introduction to Pharmacy

Review Questions/Answers

1. Which of the following offers the best definition of pharmaceutical care?
   a. care provided to patients in their own homes
   b. a type of health insurance that allows patients to pay a blanket fee for health care coverage
   c. a service or group of services that optimizes therapeutic outcomes for patients
   d. provision of medication-related care whose outcomes improve a patient's quality of life

   Answer: d. The other definitions are for home health care (a), managed care (b), and medication therapy management.

2. What, generally, is the minimum level of formal education a person must have to work as a pharmacy technician?
   a. high school diploma
   b. an associate's degree from a community college
   c. certification by the Pharmacy Technician Certification Board (PTCB)
   d. a bachelor of science in pharmacy

   Answer: a. Most employers require a pharmacy technician to have a high school diploma; the PTCE requires a high school diploma or GED. Certification (c) should not be confused with formal education.

3. Which of the following is the most important consideration for a pharmacy technician who wishes to act in a professional manner?
   a. assisting the pharmacist in completion of his or her duties
   b. respecting the confidentiality of patient information
   c. ensuring the health and safety of the patient
   d. maintaining good relationships with coworkers

   Answer: c. All the other issues are important, but the most important consideration is the health and safety of the patient.

4. Which of the following best describes the continuing education requirements for a certified pharmacy technician who has passed the PTCE?
   a. The technician must complete 20 hours of training per year, with no restrictions on subjects or types of training.
   b. The technician must complete 25 hours of training outside of work in two years, with two hours of training on pharmacy law.
   c. The technician must complete 20 hours of on-the-job training in one year, with one hour on pharmacy law.
   d. The technician must complete 20 hours of continuing education in two years, of which one hour must be on pharmacy law and only ten may be earned at the workplace.

   Answer: d. Technicians must recertify every two years and must complete twenty hours of training. Training on the job can compose only ten hours of the 20 required, and at least one hour must be devoted to topics related to pharmacy law.
5. Which of the following best describes the function areas of the Professional Technician Certification Examination (PTCE) and percentages of each function area on the test?
   a. assisting the pharmacist in serving patients (60%), maintaining medication and inventory control (25%), and participating in the administration and management of pharmacy practice (15%)
   b. assisting the pharmacist in serving patients (66%), maintaining medication and inventory control (22%), and participating in the administration and management of pharmacy practice (12%)
   c. assisting the pharmacist in serving patients (50%), dispensing practices (35%), and maintaining medication and inventory control systems (15%)
   d. regulations and technician duties (25%), drugs and therapy (23%), and dispensing process (52%)
   **Answer:** b. **Answer d covers the topics and percentages for ExCPT, not PTCE. Answer c has one topic that is not on the PTCE and has incorrect percentages, while answer d has the correct set of topics but incorrect percentages.**

6. Which of the following is part of the Code of Ethics for Pharmacy Technicians?
   a. The pharmacy technician will arrive at work on time.
   b. The pharmacy technician will present a professional appearance at work by wearing appropriate clothing.
   c. The pharmacy technician will respect the confidentiality of a patient’s medical records.
   d. The pharmacy technician will serve customers in the store in preference to taking phone calls.
   **Answer:** c. **This is the only item listed in the Code of Ethics. Maintaining patient confidentiality is very important because failure to do so may violate federal law.**

7. Which of the following best describes how technicians should approach certification if they are working in states that do not require it?
   a. There is no reason to spend the time and money to become certified until it is required.
   b. Certification shows that the technician has skills appropriate to any pharmacy environment and demonstrates the technician’s commitment to the profession.
   c. Certification should be pursued only if required for job advancement.
   d. Certification should be pursued so you will be able to supervise coworkers.
   **Answer:** b. **Because certification demonstrates a commitment to the profession, it is worth pursuing even when it is not required.**

8. New technicians starting their first job might expect to perform all the following duties except
   a. filling automated medication dispensing cabinets.
   b. receiving prescriptions from customers or fax machines.
   c. educating patients about medications and suggesting alternatives.
   d. checking out patients at the cash register.
   **Answer:** c. **Only the pharmacist should educate patients about medicines or suggest alternatives. If a patient requests such services, you should refer the patient to the pharmacist.**

9. Outpatient pharmacy and medical services are becoming more common. Which of the following best explains why this is happening?
   a. the need to reduce the number of hours doctors work
   b. the need to contain skyrocketing costs of health care
   c. the improvement in diagnostic services
   d. the reduction in the number of independent medical providers
   **Answer:** b. **Skyrocketing health care costs are the primary reason for the increase in outpatient care.**
10. A state passes a new law that requires all pharmacy technicians to send in information about their residence, place of employment, and level of education. The state government will record this information in a database. This is an example of
a. registration.
b. accreditation.
c. licensure.
d. certification.

*Answer: a. Because this process makes a list of technicians, it is an example of registration.*

11. A patient who is on heart medication comes in with a bad cold. The patient brings an over-the-counter decongestant and an herbal remedy to the checkout counter. You think that these may interact with the patient's heart medication. Other people are in line behind the patient. What course of action is most appropriate in keeping with the Code of Ethics?
   a. Run a quick Internet search to see if the combination is safe
   b. Sell the person the decongestant and herbal remedy without saying anything
   c. Advise the patient that there may be an interaction with the heart medication
   d. Ask the patient to wait while you tell the pharmacist about the situation

*Answer: d. The Code of Ethics indicates that the first consideration is ensuring the health and safety of the patient. However, only the pharmacist is qualified to offer advice on potential interactions. Offering the patient advice when other patients are in line may reveal confidential information.*

12. Which of the following is not one of the ten characteristics of a professional, as listed by the American Pharmacists Association (APhA)?
   a. Conscience and trustworthiness
   b. Knowledge and skills of the profession
   c. Appropriate dress
   d. Ethically sound decision making

*Answer: c. Although professionals should dress appropriately, this is not part of the APhA list.*

13. What is required before a pharmacist can practice in a state?
   a. The pharmacist must earn a PharmD degree.
   b. The pharmacist must earn a PharmD degree and pass state board examinations.
   c. The pharmacist must pass state board examinations and complete an apprenticeship.
   d. The pharmacist must complete coursework beyond the PharmD degree.

*Answer: b. Pharmacists cannot practice as registered pharmacists until they have completed the PharmD degree and passed the state board of pharmacy's exams.*

14. Technical and community college programs for pharmacy technicians typically take how long to complete?
   a. One semester
   b. 3–6 months
   c. 6–24 months
   d. Exactly one year

*Answer: c. Community and technical college programs typically require 6–24 months for completion.*

15. The practice of pharmacy takes place in many environments, which are commonly divided into the following two settings:
   a. Community pharmacies and mail-order pharmacies
   b. Hospitals and home health care
   c. Ambulatory care and institutional
   d. General and specialty pharmacy services

*Answer: c. The environments are divided into ambulatory (or outpatient) and institutional settings.*

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16. A pharmacy benefit manager (PBM) can offer prescription medicines to members at lower prices. Which answer best explains how this can happen?
   a. The PBM gets a professional discount from suppliers and passes it on.
   b. The PBM can insist that doctors prescribe generic versions of drugs.
   c. The PBM can import drugs from other countries, where they are often less expensive.
   d. The PBM, because it has a large number of patients, can negotiate with manufacturers for discounts and rebates.

   Answer: d. The PBM can often negotiate discounts and rebates because of the size of the patient base.

17. Which of these statements most accurately describes the differences in responsibilities between pharmacists and pharmacy technicians?
   a. Only pharmacists are responsible for the health and safety of patients.
   b. Both pharmacists and pharmacy technicians educate patients on drug interactions.
   c. Only pharmacists are required to maintain patient confidentiality.
   d. The pharmacist is ultimately responsible for the performance of the technicians.

   Answer: d. Legally, the pharmacist is ultimately responsible for the performance of the technicians.

18. Which of the following choices lists two examples of institutional pharmacy services?
   a. community pharmacies and mail-order pharmacies
   b. hospitals and home health care
   c. hospitals and long-term care centers
   d. community pharmacies and long-term care centers

   Answer: c. All other choices have at least one ambulatory care setting.

19. According to federal law, which of the following are required to establish medication therapy management (MTM) programs?
   a. pharmacy benefit managers
   b. long-term care facilities
   c. Medicare prescription drug providers
   d. home health care providers

   Answer: c. The Medicare Modernization Act requires Medicare prescription drug providers to establish MTM programs.

20. Which statement about automated dispensing technology is not accurate?
   a. The system does not check for drug allergies or interactions.
   b. The system is faster and more accurate than humans and makes the dispensing process safer for patients.
   c. Because no technology functions correctly all the time, the pharmacy technician should ensure that any errors are corrected before the medication leaves the pharmacy.
   d. Patient information is generally more accurate and easier to access.


21. Given current trends in health care, which of the following statements about the future of pharmacy technicians seems most accurate?
   a. The increased use of technology will decrease the demand for technicians.
   b. The current system will probably change in only minor ways, if at all.
   c. The roles of pharmacy technicians are expanding, and more will be expected of them.
   d. The use of technology will decrease.

   Answer: c. Under current trends, the roles of and demands on technicians are expanding, and these trends are expected to continue.
22. Which of the following activities is not one that experienced pharmacy technicians might be expected to perform?
   a. reviewing billing statements and solving errors or discrepancies
   b. assisting the pharmacist in monitoring patient outcomes
   c. preparing sterile solutions
   d. overriding the programming of an IV pump

   Answer: d. Because the programming of an IV pump controls dosage level, a technician would not make a decision to override it.

23. Patients in hospice care have incurable diseases and are generally expected to live
   a. 6 weeks or less.
   b. 3 months or less.
   c. 6 months or less.
   d. 1 year or less.

   Answer: c. Patients in hospice care are generally expected to live 6 months or less.

24. The aim of hospice care is to provide dying patients with the best possible quality of life. Which of the following is the usual focus for pharmacists and technicians in hospice settings?
   a. slowing the progress of the disease as much as possible
   b. relieving symptoms, such as pain, anxiety, or nausea
   c. minimizing the cost of medical treatment
   d. treating all secondary conditions caused by the incurable disease

   Answer: b. Because the aim of hospice care is to provide the dying patient with the best possible quality of life, the activities of pharmacists and technicians generally focus on relief from symptoms. If a secondary condition does not create issues with quality of life, it may go untreated.

25. The top priority for pharmacists and technicians is
   a. efficient workflow.
   b. profitability.
   c. patient safety.
   d. legal workload.

   Answer: c. Patient safety is consistent with the code of ethics to which all health care professionals adhere.

26. Pharmacy technicians who take the PTCE must be sure to keep track of their continuing education credits in order to
   a. renew their accreditation.
   b. renew their credentials.
   c. renew their certification.
   d. renew their degree.

   Answer: c. Certification renewal is the purpose of continuing education credits, so keeping track of them is essential.

27. Which of the following is a characteristic of a professional?
   a. leadership
   b. conscience and trustworthiness
   c. service orientation
   d. all of the above

   Answer: d. Professionalism is actively demonstrating attitudes, qualities, and behaviors of a person well educated in an area of specialized knowledge, as reflected in the Code of Ethics.
28. Technology has
   a. improved safety to 100% with bar-coding.
   b. made a positive impact on patient safety.
   c. no impact on patient safety.
   d. a negative impact on patient safety.

   Answer: b. Technology has significantly improved patient safety, but because of human error, no technology will ever achieve 100% safety.

29. Students who complete an accredited pharmacy technician education program
   a. may practice in hospital settings.
   b. may practice in retail settings.
   c. may practice in home health settings.
   d. may practice in most pharmacy settings.

   Answer: d. An accredited program ensures the potential to practice in most pharmacy settings.

30. Maintaining the day-to-day operations of automated dispensing devices is a task that is most often handled by
   a. pharmacy technicians.
   b. pharmacists.
   c. pharmacy interns.
   d. pharmacy managers.

   Answer: a. Automated work that does not require professional judgment is appropriate for pharmacy technicians.

Chapter 2 • Pharmacy Law

Review Questions/Answers

1. If state and federal laws or regulations differ regarding the requirements for dispensing a controlled substance, which of the following choices applies?
   a. The federal law or regulation has priority and therefore prevails over the state law.
   b. The state law or regulation has priority and therefore prevails over the federal law.
   c. Federal and state laws or regulations always coincide regarding requirements for controlled substances.
   d. Sometimes the federal law or regulation must be followed and sometimes the state law or regulation must be followed.

   Answer: d. When there is disagreement between the federal and state law or regulation, a pharmacy must comply with the strictest one, which might be either one.

2. Which of the following is not a regulatory function performed by the state boards of pharmacy?
   a. inspecting pharmacies
   b. investigating complaints
   c. issuing a prescriber’s number
   d. issuing rules and regulations

   Answer: c. A prescriber’s number is assigned by the DEA.

3. Which of the following statements about states’ laws and regulations regarding pharmacy technicians is false?
   a. The particular requirements for pharmacy technicians may vary from state to state.
   b. Under special circumstances, some states allow pharmacy technicians to perform pharmacy tasks that ordinarily only pharmacists can perform.
   c. Pharmacy state laws are enacted by state legislatures, and regulations are issued by state regulatory agencies.
   d. Some states require criminal background checks.

   Answer: b. State pharmacy laws do not permit pharmacy technicians to perform tasks and responsibilities that are limited to pharmacists.