Telepharmacy Systems

Unit: Prescription Processing

Problem Area: Pharmacy Technology Systems

Lesson: Telepharmacy Systems

Student Learning Objectives.

Instruction in this lesson should result in students achieving the following objectives:

1. **Describe how telepharmacy systems work.**
2. **Explain the advantages and disadvantages of telepharmacy systems.**

Resources.

The following resources may be useful in teaching this lesson:

E-unit(s) corresponding to this lesson plan. CAERT, Inc. http://www.mycaert.com.

Aiken, Cheryl, and Robert J. Anderson. *Certification Exam Review for Pharmacy Technicians,* 4th ed. Paradigm, 2017.

Alexander, Emily, et. al. "ASHP Statement on Telepharmacy," *ASHP.* Accessed May 6, 2019. https://www.ashp.org/-/media/assets/policy-guidelines/docs/statements/telepharmacy.ashx.

Ballington, Don A., and Robert J. Anderson. *Pharmacy Practice for Technicians*, 6th ed. Paradigm, 2017.

Ballington, Don A., Mary M. Laughlin, and Skye A. McKennon, *Pharmacology for Technicians,* 6th ed. Paradigm, 2016.

Compton-Brown, Anne, and Serj Mooradian. "State Regulation of Telepharmacy," *Pharmacy Times*. Accessed May 6, 2019. https://www.pharmacytimes.com/news/state-regulation-of-telepharmacy.

Davis, Karen, and Anthony Guerra. *Mosby's Pharmacy Technician,* 5th ed. Elsevier, 2019.



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Equipment, Tools, Supplies, and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

Key Terms.

The following terms are presented in this lesson (shown in bold italics):

- adverse reaction
- clean room
- intravenous (IV)
- IV admixture
- lot number
- telepharmacy

Interest Approach.

Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *In 2001, North Dakota became the first state to pass regulations that allow retail pharmacies to operate without a pharmacist on site. In 2003, Alaska established a similar program to improve pharmaceutical services in rural, native settlements. These services were in response to the need for alternative pharmacy services in areas without a full-time pharmacist. Currently, about 23 states have written regulations to allow this practice. Ask the students how they feel about communicating with a pharmacist over a video screen or telecom system. Lead a class discussion on off-site communication with a pharmacist, and create a list of advantages and disadvantages with the help of the students.*

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CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Describe how telepharmacy systems work.

Anticipated Problem: What is telepharmacy? How do telepharmacy systems work?

I. ***Telepharmacy*** is pharmaceutical care via telecommunications. Generally, this involves video, online messaging, or telephone calls between pharmacists and patients that are homebound or in rural locations. The American Society of Health System Pharmacists (ASHP) defines telepharmacy as "the provision of pharmacist care by registered pharmacies and pharmacists located within U.S. jurisdictions through the use of telecommunications or other technologies to patients or their agents at distances that are located within U.S. jurisdictions." (Read more at https://www.ashp.org/-/media/assets/policy-guidelines/docs/statements/telepharmacy.ashx.)

A. TELEPHARMACY TYPES: Telepharmacy systems can be especially useful in supporting settings that need to dispense medication when a pharmacist is not physically present or when pharmacy resources may be limited. There are several different types of telepharmacy services.

1. *Inpatient Remote Order*: With inpatient remote order, a pharmacist at a remote location performs order-entry services for a hospital pharmacy. The remote pharmacist reviews medication orders before the hospital staff administers the medication to patients. With this type of telepharmacy, the pharmacist is seen as an extension of the in-house pharmacy.
   a. The pharmacist would provide 24/7 coverage or fill in during peak hours.
   b. An ***IV admixture*** is the preparation of intravenous medication in a 50 ml (or greater) bag or bottle. ***Intravenous (IV)*** refers to a substance administered into a vein. An IV admixture requires the mixing of IV solutions that will be administered to patients in the hospital. With remote order, a pharmacist can review the admixture remotely. This eliminates the need for the pharmacist to put on protective wear and enter a ***clean room*** (a controlled, sterile environment that has been thoroughly disinfected). Clean rooms have low levels of pollutants, such as dust, airborne organisms, or vaporized particles. A clean room allows mixtures to be prepared without harmful bacteria and allergens entering the patient through an IV. Since the pharmacist is off site, only the nurse or pharmacy tech will need to prepare the admixture.
2. *Remote Dispensing*: With remote dispensing, a pharmacy located in a rural community is staffed by a certified pharmacy technician that is supervised by an off-site pharmacist. Similar to the relationship of a doctor and nurse practitioner, the pharmacist supervises the technician and reviews prescriptions from

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a remote location, usually via a computer program. Remote dispensing gives patients convenient access to a pharmacist in areas that cannot support a full-time pharmacist.

3. *Remote Counseling*: In some areas, pharmacists can provide patient counseling through a live video, a telephone call, or online messaging (through a live-chat provider). Pharmacists have been counseling patients over the phone since it was first invented. Even today, pharmacists have been known to check on patients starting a new medication or using a mix of drugs that may have negative interactions.

B. TELEPHARMACY PROCEDURES: Telepharmacy systems allow a licensed pharmacist to deal with technicians, nurses, and patients remotely. Generally, these systems are built for the use of a technician and remote pharmacist to work together and prepare a prescription.

1. Similar to a traditional pharmacy, the technician receives a prescription (through a fax, a phone call, online, a program, or from the patient) and enters it into a specialized computer program.
2. The technician prepares the prescription. Through the pharmacy's computer program, the technician sends images of the prescription, computer-generated medication labels, pills, and the labeled medicine bottle to the pharmacist. The label contains an expiration date and ***lot number***, the identification number assigned to a quantity of material from a single manufacturer. These images and the patient profile are securely stored in the computer system for verification.
3. The pharmacist reviews the patient's medication profile for drug interactions and other potential problems. The review includes any interactions that might cause the patient to experience an ***adverse reaction***, any unexpected or dangerous reaction to a drug. (Most programs have a flagging system for drug interactions, but the pharmacist is responsible for finding any possible interactions.) The pharmacist reviews the digital pictures of the completed prescription. Then, the prescription is approved or flagged for review. If flagged for review, the tech calls the pharmacist to discuss any issues.
4. Once the pharmacist has approved the prepared prescription, the technician asks the patient if they need to speak to the pharmacist. Generally, a private consultation room for counseling is used for the patient to communicate in real time with the pharmacist through telephone, video, or online conferencing. The tech checks out the patient before setting up the consultation.

Teaching Strategy: *Use VM–A to review the prescription filling process at a telepharmacy.*

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Objective 2: Explain the advantages and disadvantages of telepharmacy systems.

Anticipated Problem: What are the advantages and disadvantages of telepharmacy systems?

II. Although modern technology and telepharmacy procedures can be an advantage, especially in rural areas, there are also some disadvantages.

A. ADVANTAGES: Telepharmacy systems provide easy access to pharmacists in remote and rural locations, economic benefits, improved access to medication, customer satisfaction, and lower error rates.

1. Patients living in remote areas may not receive the consultations they need without a telepharmacy. Without the need to travel to a larger city, prescriptions are filled immediately. This decreases the time patients wait to receive their medications.
2. Telepharmacy systems are highly cost effective. One pharmacist can serve multiple sites, thereby saving a pharmacy network thousands of dollars each year. Patients can also benefit financially, as many would have difficulty affording their medications without local consultation.
3. Improved access to medications in rural areas has led to improved patient satisfaction. An assessment of telepharmacy systems revealed that more than 75% of the patients were satisfied with communication through remote conferencing. Rural patients value receiving pharmacy services locally. Patients report that having a video consultation is better than simply receiving medication in the mail.
4. According to several studies conducted in North Dakota, telepharmacies produced lower error rates in medication preparations than the traditional community pharmacy. This has been a standard finding across the board.

B. DISADVANTAGES: Disadvantages of telepharmacy systems include privacy issues, continuity of care, differing laws, and the reluctance of customers to try new technology.

1. Telepharmacy systems involve the transmission of personal information over the internet. Care must be taken to ensure the privacy and security of all electronically-transmitted health information on patients.
2. Ensuring continuity of care becomes more complex at remote sites. Remote workflow might be overwhelming for some technicians, as it adds extra steps. Although pharmacy technicians are supervised by a pharmacist from a central location, the risk of a violation of the regulations is harder to monitor. Also, remote counseling can hinder the pharmacist's ability to visually assess the patient's condition.
3. From state to state, laws and pharmacy boards differ in their definitions, restrictions, staffing, and educational requirements for telepharmacies. The current laws and policies that govern traditional pharmacy operations do not adequately address the growing telepharmacy industry. A number of issues, such as the physical location of the pharmacist, the minimum amount of time

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that a pharmacist must be on site, and the types of technology used, need to be addressed.

4. Some patients, especially the elderly, are reluctant to try new technology. They may have a more difficult time communicating with the pharmacist through online resources.

Teaching Strategy: *Use VM–B to compare and contrast the advantages and disadvantages of telepharmacy systems. Assign LS–A.*

Review/Summary.

Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. If a textbook is being used, questions at the ends of chapters may also be included in the Review/Summary.

Application.

Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.

Evaluation.

Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

Answers to Sample Test:

Part One: Matching

1. e
2. a
3. d
4. b
5. c
6. f

Part Two: Completion

1. remote pharmacist
2. dispensing
3. Pharmacists
4. patient satisfaction
5. error
6. personal

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Part Three: True/False

1. T
2. F
3. F
4. T
5. T
6. F

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Sample Test

Name _____

Telepharmacy Systems

Part One: Matching

Instructions: **Match the term with the correct definition.**

a. lot number
b. IV admixture
c. adverse reactions
d. clean room
e. telepharmacy
f. intravenous (IV)

_____1. Pharmaceutical care via telecommunications

_____2. The identification number assigned to a quantity of material from a single manufacturer

_____3. A controlled, sterile environment that has been thoroughly disinfected

_____4. The preparation of intravenous medication in a 50 ml (or greater) bag or bottle

_____5. Any unexpected or dangerous reaction to a drug

_____6. A substance administered into a vein

Part Two: Completion

Instructions: **Provide the word or words to complete the following statements.**

1. A/An _____ reviews medication orders before the hospital staff administers the medication to patients.
2. Remote _____ gives patients convenient access to a pharmacist in areas that cannot support a full-time pharmacist.
3. _____ have been counseling patients over the phone since it was first invented.
4. Improved access to medications in rural areas has led to improved _____.



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5. Telepharmacies produce lower _____ rates in medication preparations than the traditional community pharmacy.

6. Telepharmacy systems involve the transmission of _____ information over the internet.

Part Three: True/False

Instructions: **Write *T* for true or *F* for false.**

_____1. Remote dispensing gives patients convenient access to a pharmacist in rural areas.

_____2. The pharmacy technician is ultimately responsible for drug interactions and other potential problems.

_____3. Patients report that a video consultation through a telepharmacy is worse than receiving medication in the mail.

_____4. Telepharmacy systems are highly cost effective.

_____5. Even with supervision, the risk of a technician violating regulations is harder to monitor in a telepharmacy.

_____6. From state to state, laws and pharmacy boards agree in their definitions, restrictions, staffing, and educational requirements for telepharmacies.

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TELEPHARMACY: PRESCRIPTION FILLING PROCEDURES



- The technician receives a prescription (through a fax, a phone call, online, a program, or from the patient) and enters it into a specialized computer program.
- The technician prepares the prescription. Through the pharmacy's computer program, the technician sends images of the prescription, computer-generated medication labels, pills, and the labeled medicine bottle to the pharmacist.
- The pharmacist reviews the patient's medication profile for drug interactions and other potential problems. The pharmacist approves or flags a prescription. The tech calls the pharmacist when receiving a flagged prescription.
- Once the pharmacist has approved the prepared prescription, the technician asks the patient if they need to speak to the pharmacist. Generally, a private consultation room for counseling is used for the patient to communicate in real time with the pharmacist through telephone, video, or online conferencing. The tech checks out the patient before setting up the consultation.

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ADVANTAGES AND DISADVANTAGES OF TELEPHARMACY SYSTEMS

Advantages	Disadvantages
Patients living in remote areas may not receive the consultations they need without a telepharmacy	Telepharmacy systems involve the transmission of personal and health related information over the internet.
Without the need to travel to a larger city, prescriptions are filled immediately.	Remote workflow might be overwhelming for some technicians.
Telepharmacy systems are highly cost effective.	Due to remote supervision, a risk of the violation of regulations is possible.
Improved access to medications in rural areas has led to improved patient satisfaction.	From state to state, laws and pharmacy boards differ in their definitions, restrictions, staffing, and educational requirements for telepharmacies.
Telepharmacies produce lower error rates in medication preparations.	Some patients, especially the elderly, are reluctant to try new technology.





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LS–A

Name _____

Telepharmacy Report

Purpose

The purpose of this activity is to write a report that describes a telepharmacy.

Objective

Prepare a report that describes how a telepharmacy works, compares and contrasts the advantages and disadvantages of telepharmacy, and differentiates between a traditional pharmacy and a telepharmacy.

Materials

- device with word processing, Internet, and printer access
- paper
- pen or pencil

Procedure

1. Review your class notes.
2. Research information about telepharmacies. Make notes on the following facts:
   a. What is a telepharmacy?

   b. How does a telepharmacy operate?

   c. What are some advantages of a telepharmacy?



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d. What are some disadvantages of a telepharmacy?

e. What are some considerations for implementing a telepharmacy?

f. How does a telepharmacy differ from a traditional pharmacy?

3. Write a report with the information that you have researched.
4. Share your report with your classmates and your instructor.
5. Participate in a discussion about telepharmacy with your classmates.
6. Turn in your report to your instructor.

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