

Telepharmacy Systems

FOR MOST OF US who live in populated areas, we take pharmacy access for granted. We have easy access to health care and emergency care. Most of us have our choice of pharmacies, some of which are located right across the street from each other. However, there are millions of people who do not have easy access to a pharmacy. Many patients must travel outside of their communities to fulfill their medication needs. Telepharmacy systems provide critical access to medication and consultation for patients without a local pharmacy.



Objective:



Describe telepharmacy systems, including their advantages and disadvantages.

Key Terms:



adverse reaction
clean room

intravenous (IV)
IV admixture

lot number
telepharmacy

Telepharmacy Systems: Types, Procedures, Advantages, and Disadvantages

Telepharmacy is pharmaceutical care via telecommunications. Generally, this involves video, online messaging, or telephone calls between pharmacists and patients that are home-bound 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>.)

TELEPHARMACY TYPES AND PROCEDURES

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.

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.

- ◆ The pharmacist would provide 24/7 coverage or fill in during peak hours.
- ◆ 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.



FIGURE 1. The pharmacy plays a key role in the intravenous medication therapy process. IV therapies must be prepared in a special room using sterile techniques, with surfaces that are easily cleaned (like the stainless steel surfaces in this photo).

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 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.

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.

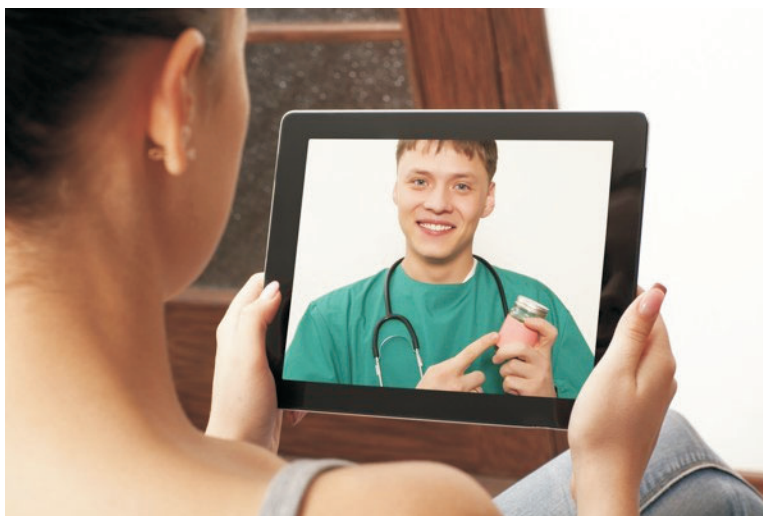


FIGURE 2. Telepharmacy can expand health care outside the walls of a retail pharmacy. This can help pharmacists with creating and managing new relationships with customers.

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.

- ◆ 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.
- ◆ 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.
- ◆ 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.
- ◆ 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.



FURTHER EXPLORATION...

ONLINE CONNECTION: What is a Pharmacy Desert?

You may have heard of a food desert, an area (especially one with low income residents) that has limited access to nutritious food. Researchers have identified another type of desert, the pharmacy desert. Read the TelePharm article, "Trend: What is a Pharmacy Desert?," at the web site <http://blog.telepharm.com/what-is-a-pharmacy-desert>. Examine the

similarities and differences between the urban desert and the rural desert. Is there a pharmacy desert located near you? Is this due to socioeconomic factors or a small population?



ADVANTAGES AND DISADVANTAGES OF TELEPHARMACY SYSTEMS

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

Advantages of Telepharmacy Systems

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

- ◆ 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.
- ◆ Telepharmacy systems are highly cost effective. One pharmacist can serve multiple sites, thereby saving a pharmacy network thou-

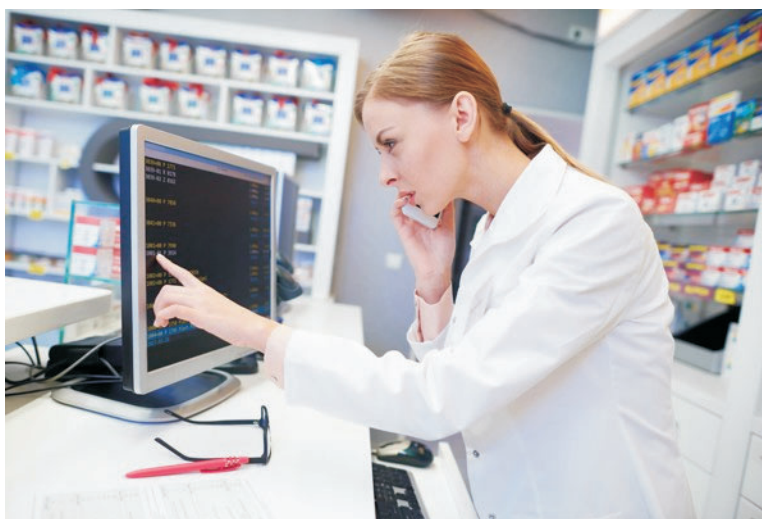


FIGURE 3. Telepharmacies produce lower error rates in medication preparations than the traditional community pharmacy. Online double-checking procedures assure the prescription is read multiple times.

sands of dollars each year. Patients can also benefit financially, as many would have difficulty affording their medications without local consultation.

- ◆ 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.
- ◆ 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.

Disadvantages of Telepharmacy Systems

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

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

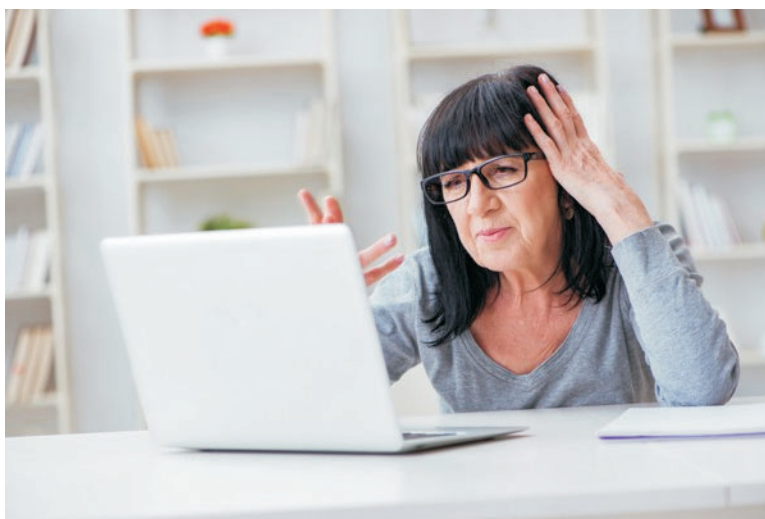


FIGURE 4. Some patients, especially the elderly, are reluctant to try new technology. They may have a more difficult time communicating with the pharmacist through online resources.

Summary:



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.

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.

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.

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

Checking Your Knowledge:



1. What is telepharmacy?
2. Describe four types of telepharmacy.
3. What are the procedures for filling prescriptions at a telepharmacy?
4. List the advantages of a telepharmacy.
5. List the disadvantages of a telepharmacy.

Expanding Your Knowledge:



Check out a telepharmacy location, or look up an online pharmacy. Ask your local hospital if they use remote pharmacists. Report your findings to the class.

Web Links:



Phone-a-Pharmacist

<https://www.aacp.org/article/phone-pharmacist>

Telepharmacy: a Pharmacist's Perspective

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5741040/>

Telepharmacy: New Jobs

<https://www.drugtopics.com/latest/telepharmacy-new-jobs-expanded-opportunities/>