

THE BENEFITS AND CHALLENGES OF TELEPHARMACY

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Topic Overview

The delivery of pharmacy care to patients via telecommunications has been practiced in the U.S., for many decades. Originally conceived to serve remote, rural communities, telepharmacy has been expanding to reach other underserved areas and was further spurred by the social and public health conditions created by the COVID-19 pandemic. Telepharmacy is the use of telecommunications technology in pharmacy practice in which pharmacists or pharmacy staff conduct or oversee the different aspects of pharmacy operations or patient-care services from a long distance. There are clear benefits to telepharmacy, such as greater access to pharmacy services. Telepharmacy also enables pharmacists to take a greater role in managed patient care.

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Credits: 1 hour of continuing education credit

Type of Activity: Knowledge

Media: Internet

Fee Information: \$4.99

Estimated time to complete activity: 1 hour, including Course Test and course evaluation

Release Date: December 19, 2022 **Expiration Date:** December 19, 2025

Target Audience: This educational activity is for pharmacy technicians.

How to Earn Credit: From December 19, 2022, through December 19, 2025, participants must:

- 1) Read the “learning objectives” and “author and planning team disclosures;”
- 2) Study the section entitled “educational activity;” and
- 3) Complete the Course Test and Evaluation form. The Course Test will be graded automatically. Following successful completion of the Course Test with a score of 70% or higher, a statement of participation will be made available immediately. (No partial credit will be given.)

Learning Objectives: Upon completion of this educational activity, participants should be able to:

1. **Define** the term telepharmacy and describe its uses in the pharmacy setting
2. **Describe** the benefits and challenges of telepharmacy
3. **Identify** ways to overcome the challenges of telepharmacy
4. **Identify** regulatory issues related to telepharmacy

Disclosures

The following individuals were involved in the development of this activity: Gerald Gianutsos, Ph.D., J.D., and Susan DePasquale, MSN, PMHNP-BC. There are no financial relationships relevant to this activity to report or disclose by any of the individuals involved in the development of this activity.

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Introduction

The delivery of pharmacy care to patients via telecommunications has been practiced in the U.S., for more than two decades. Originally conceived to serve remote, rural communities, telepharmacy has been expanding to reach other underserved areas and people. It was further spurred by the social and public health conditions created by the COVID-19 pandemic. Telepharmacy can improve patient care and outcomes, but it also comes with challenges. This technology profoundly changes how people communicate and interact, and because of this, it can lead to changes that may not always be beneficial. Pharmacists and pharmacy staff who are aware of these challenges can mitigate them through proper education and practice.

The Evolution of Telepharmacy

The birth of telepharmacy can be said to have occurred when pharmacists first used the telephone to dispense prescriptions.¹ Since then, telecommunication technologies have expanded rapidly.² Information is now transferred instantaneously over the Internet. People have adopted these technologies and made them part of their everyday lives.² Telepharmacy was developed within these technologies to provide healthcare services to remote populations from long distances.²

Telepharmacy and Remote Access

Modern telepharmacy is believed to have originated in North Dakota in 2001, as a means of improving access to pharmacy services in sparsely-populated, underserved regions.³ A report by the State Board of Pharmacy found that 26 of the state's pharmacies in rural communities had closed, and pharmacies in 12 additional communities were at risk.³ The Board responded to this gap in the availability of pharmacist care by establishing pilot rules for telepharmacy in 2001 in the hope that virtual access would help restore pharmacy services to underserved remote rural communities.

In the following year, the North Dakota State University College of Pharmacy received a federal grant to implement a statewide telepharmacy program and test the newly created telepharmacy pilot rules.⁴ When the pilot project proved to be successful, the board of pharmacy acted to establish permanent rules and allowed telepharmacy to be practiced on a broader scale in the state.^{3,4}

Since 2001, the concept of telepharmacy has grown, and by the end of the decade, laws and regulations specifically authorizing the use of telepharmacy were established in Montana, South Dakota, Texas, and Idaho, while other states instituted pilot programs.⁵ Videoconferencing has also been implemented by the Indian Health Service to provide pharmacist services to remote areas of Alaska and by the U.S. Navy.⁶

In a typical telepharmacy environment, a licensed pharmacist may remotely supervise one or more pharmacy technicians at one or more distant sites through video conferencing technology.⁷ Although specific features vary from state to state, the remote pharmacist generally reviews prescriptions, verifies dispensing by technicians, and aids patients in correct medication use.^{5,7}

Telepharmacy and COVID-19

The COVID-19 pandemic also caused significant growth in the use of telemedicine. Telepharmacy also grew dramatically during the pandemic as patients and providers sought to limit direct contact.⁸ The COVID-19 Public Health Emergency declaration allowed federal and state governments to take emergency steps that allowed easier access to remote care.⁹

These changes in the delivery of medical and pharmacy services were needed to limit person-to-person contact, promote social distancing, and allow services during quarantine. The adoption of new methods of communication and delivery of services between healthcare practitioners and patients was essential to limiting the spread of COVID-19.¹⁰ During the first surge of COVID-19 cases in 2020, 69% of doctor-patient visits were via telemedicine.¹²

Telepharmacy also grew dramatically.¹⁰ As a consequence, greater attention is now being placed on defining what telehealth and telepharmacy are, and what role they can and should play in the delivery of healthcare services.

Defining Telepharmacy

Telepharmacy is a form of telemedicine or telehealth.² The word telemedicine comes from a combination of the Greek word *telos*, which means “at a distance,” from which we derive “tele,” and the Latin word *meden*, meaning “to heal,” from which we get the English word “medicine.”² Thus, telemedicine may be defined as “the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, health administration, and public health.”⁹ Telepharmacy is a more specific term. It is defined as the use of telecommunications technology in pharmacy practice in which pharmacists or pharmacy staff conduct or oversee the different aspects of pharmacy operations or patient-care services from a long distance.⁸

In addition, in states that have passed laws related to telepharmacy practice, the statutes may define the term telepharmacy to set parameters on how and where it may be used. For example, the North Dakota statutes establishing telepharmacies in the state, define a telepharmacy as “a central pharmacy with one or more remote sites in which all sites are connected via computer link, videolink, and audiolink.”³ A remote site is “a pharmacy staffed by a registered pharmacy technician with access to its main pharmacy and registered pharmacists by computer link, videolink, and audiolink while open.”³ A pharmacist at the central site must approve any prescription before it leaves the remote site and must confirm that the prescription dispensed and the prescription’s label are accurate. The pharmacist must also remotely counsel the patient (or patient’s agent) on all new prescriptions and refills. Also, some exceptions allow dispensing when the technician is not present.³

Technologies Used in Telepharmacy

The Internet has led to greater innovation in the digital world. The most profound changes are driven by the creation of computer or phone applications, and remote access devices such as the kiosk.

Technologies and Applications

Telemedicine and telepharmacies have incorporated many of the popular innovations that have been developed. The most commonly used technologies are those involving telephones, videoconferencing, and the Internet.² They may also use applications such as Skype, FaceTime, Zoom, Google, and others.¹² Devices such as smartphones are also important links to telepharmacy access.² In the U.S., 89% of adults own a smartphone, and the total only drops to 78% for adults worldwide. Like other technologies, smartphones help facilitate more equitable and accessible healthcare for many, especially for those residing in communities that lack adequate healthcare facilities.² The smartphone has also changed the perception of the patient, who is now a “more informed” consumer who demands more from his or her pharmacist or healthcare provider.²

Kiosks

Self-service, automated vending machines, also known as kiosks, that directly connect a patient to a remote pharmacist through real-time video and audio communication are another form of telepharmacy.¹³ These machines store medications, including controlled substances, and can label and dispense prescriptions.¹³ The patient loads the prescription into the machine, and the on-call pharmacist, connected via an audio-visual link, can review the prescription, provide counseling, and authorize the machine to dispense the medication.¹⁴ Pharmacy kiosks have been available since 2014, when they were installed for student use at Arizona State University, but only a handful of states currently permit pharmacy kiosks.^{14,15} Kiosks can be found in many locations in states where they are allowed, such as Arizona, while recently, the state of Florida expanded the number of sites where kiosks will be permitted.¹⁵

Benefits of Telepharmacy

There are clear benefits to telepharmacy. For example, telepharmacy services provide pharmacy access to rural communities that would be underserved without it. Telepharmacy also provides pharmacists with more opportunities to deliver clinical services. Patient response to telepharmacy has been positive, and its potential use in promoting beneficial lifestyle changes in patients has been recognized. Also, telepharmacy provides a vehicle for the delivery of pharmacy services when mandatory social distancing is instituted.

Pharmacy Access to Rural Communities

Telepharmacy increases patient access and better care to a wide variety of pharmacy activities.¹⁶ This is especially true in rural and other underserved areas where a shortage of trained healthcare professionals is an obstacle to adequate healthcare.² Thus, telepharmacy provides patients access to pharmacists in areas where a pharmacist is not physically available.^{5,7,16}

This expanded access through telepharmacy is critical since nearly 20% of the U.S. population lives in rural areas. Moreover, the number of independently owned pharmacies serving these areas has been consistently declining, with a resultant erosion of pharmacy services available to the inhabitants.⁵ This may occur because a small, rural community loses the only pharmacist in the area. The loss of a rural community's only pharmacy can severely limit the community members' access to medication and may leave the community without a clinical healthcare provider.² The presence of a telepharmacy facility, which allows the pharmacist to communicate with patients, ensures a high level of accessibility to all members of the public regardless of demographics or the ability of a patient to visit a neighborhood pharmacy.¹⁰

Expanded Role for Pharmacists through Telepharmacy

In addition to providing replacement services when a brick-and-mortar pharmacy closes, telepharmacy may also provide pharmacists with more

opportunities to participate in managed care and deliver clinical services.¹⁶ A broad spectrum of pharmacy practice and patient care services and operations can be provided through telepharmacy.⁶ For example, a pharmacist may use this technology to analyze a patient's healthcare data and for clinical consultation.⁶ A patient's medication may be selected, and other medications reconciled when an order is reviewed and dispensed. Patient assessments, evaluations, and counseling may be completed through telepharmacy, as well as adverse drug event detection and monitoring. Drug information may be provided to a patient and patient outcomes may be evaluated. Also, pharmacists have recently had an expanded role in patient medication management therapy. Telepharmacy may be used for comprehensive medication management, and chronic disease state management. Finally, this technology can help with compounding verification, supervision of personnel, oversight of pharmacy operations, on-call assistance, and interactions with other healthcare practitioners.⁶

Telepharmacy and Patient Outcomes

Research suggests a general level of patient satisfaction with telepharmacy services, and that implementation can improve medication-related patient safety and patient clinical outcomes.¹ Studies have also described how technology can be successfully applied in encouraging smoking cessation, weight loss, and reducing alcohol consumption.^{6,10} Implementation of telepharmacy in the intensive care unit has been shown to reduce hospital length of stay and lower rates of preventable complications.⁶

Telepharmacy and Mandatory Social Distancing

Telepharmacy is beneficial when human-to-human close contact needs to be limited or discouraged.^{5,7,16} The value of telepharmacy became most apparent during the COVID-19 pandemic when mandatory social distancing interfered with a patient's ability to visit a pharmacy in person, thereby limiting patient-pharmacist interactions. The pandemic also created staffing shortages in pharmacies.⁸ Telepharmacy became a tool to overcome pandemic-related challenges. During the pandemic, the most common

telepharmacy initiatives were virtual consultations, home delivery of medications, and patient education.⁸

In response to the pandemic, nearly all states declared a state of emergency and loosened restrictions on telepharmacy, either by executive order or board regulations and guidelines.¹⁷ Relaxed regulations on remote pharmacy access and requirements for the physical presence of a pharmacist encouraged social isolation while maintaining pharmacy operations.¹⁷ For example, Missouri amended its regulations to allow pharmacists to use technology to verify a product remotely to “prevent illness and staffing shortages ... if needed to provide disaster or emergency relief.”¹⁸

In addition, during the pandemic, there was a temporary relaxation of other regulations, such as the requirements of the Health Insurance Portability and Accountability Act (HIPAA).¹⁹ This facilitated pharmacist use of popular teleconferencing platforms, which previously were noncompliant with privacy standards.⁸

Notably, many of the relaxed rules that facilitated the use of telemedicine are expected to expire with the end of the COVID-19 health emergency, and nearly 40 states have revoked emergency declarations that facilitated intrastate physician video visits.^{20,21} Nevertheless, telepharmacy is a potentially powerful tool for pharmacists, especially those in underserved areas. Former CMS administrator Seema Verma has said, “People recognize the value of this [telehealth], so it seems like it would not be a good thing to force our beneficiaries to go back to in-person visits.”²² Pharmacy organizations, such as ASHP, advocate for telepharmacy utilization as a means to “improve patient outcomes, expand access to healthcare, enhance patient safety, achieve effective cost-of-care, and interact with other healthcare team members.”⁶ These opinions, coupled with the benefits described herein, make it likely telepharmacy will become a permanent fixture in the field of pharmacy.

Identifying and Minimizing the Challenges of Telepharmacy

While telepharmacy offers many benefits to patients and pharmacists, there are also disadvantages and barriers to its use. These include the impact that telepharmacy may have on empathy and the pharmacist-patient relationship, telesecurity and HIPAA compliance within telepharmacy, computer or technological literacy, monopolization of telepharmacy by national pharmacies, and the issues due to the different state and federal laws applicable to telepharmacy.

Telepharmacy and Digital Empathy

Empathy on the part of a healthcare provider is recognized as vital to patient care and the patient-provider relationship.²³ Its presence has a positive effect on a patient's satisfaction, a practitioner's ability to treat the patient, and the patient's health outcome.²³ On the other hand, the absence of empathy can have an expected negative impact on patient care. Empathy may be disrupted during digital, telepharmacy consultations.²³ Digital platforms allow a person "to instantly share thoughts, feelings, and behaviors with the rest of society ... in mere seconds, often without the empathetic social filter that accompanies traditional communications."²³ Digital communications may not provide the parties engaged in conversation with the emotional signals and cues they experience when communicating face-to-face. This can cause the interaction to be more impersonal, leading to a "disinhibition effect," an effect that can lead people in digital conversations to be unempathetic, hostile, or intimidating.²³

In response to the disinhibition effect, Terry and Cain (2016) refer to "digital empathy," which is defined as the "traditional empathic characteristics such as concern and caring for others expressed through computer-mediated communications."²³ They recommend that digital empathy should be taught and practiced. This can help pharmacists and pharmacy staff avoid the disinhibition effect digital communications may give rise to.²³

Telesecurity and HIPAA Compliance within Telepharmacy

Another major barrier is concern about telesecurity and patient confidentiality.^{2,8} Healthcare providers must also comply with HIPAA requirements.^{2,8} Similarly, there is the challenge of finding adequate physical and private space where pharmacists or patients can conduct remote teleconferences.^{8,24}

Computer or Technological Literacy

There are also considerable demographic challenges. People who would benefit most from telepharmacy, such as the elderly, patients of lower economic status, patients with mental health or addictive disorders, and the homeless, might be less likely to have a device capable of sharing videos and may be less proficient in the use of the necessary technology; they also may have poor or no internet capability.^{8,24-26} Similarly, patients with language barriers or certain disabilities may struggle with telepharmacy applications.²⁴

Monopolization of Telepharmacy by National Pharmacies

Another concern is that national pharmacy chains could exploit lenient telepharmacy regulations to establish large call centers staffed with pharmacists using video to counsel patients, placing local, rural pharmacies in jeopardy.¹⁶ Some states have rules that telepharmacies must be located in-state, but others have fewer restrictions and allow the central pharmacy to be located in another state, and staffed by pharmacists not licensed by the patient's home state.¹⁶

Regulatory Issues Related to Telepharmacy

A major barrier is that existing pharmacy laws are inconsistent in recognizing telepharmacy and may interfere with its application.⁷ Laws and regulations governing the practice of telepharmacy are evolving, with more states adopting the concept and federal and state laws being revised to

facilitate its utilization.²⁷ There is also the interaction of federal and state laws and agencies.

Existing pharmacy laws and regulations were developed for onsite pharmacies, and they do not always fit seamlessly into a telepharmacy practice.⁷ Issues such as the physical location of pharmacists, the minimum amount of time that pharmacists must be on site, the technologies used, and the role of technicians are examples of the conflict.^{2,7}

Slightly fewer than half of the states have implemented regulations specifically permitting telepharmacy practice.²⁸ Many other states have pilot programs or waivers or are otherwise supportive of telepharmacies, while a few states are silent.^{27,28} Regulations among the states vary, with some being more restrictive than others. Telepharmacy is expressly prohibited in only two states, Ohio and Pennsylvania, whose administrative code explicitly requires direct supervision by a licensed pharmacist, preventing a technician-operated remote site.²⁸

Some of the conditions where differences exist among states are proximity restrictions, facility restrictions, personnel restrictions, staffing ratios, and intrastate restrictions.²⁸ Almost 2/3 of the states approving telepharmacy impose geographical restrictions. Most require the remote location to be greater than 10-20 driving miles from the nearest nonremote pharmacy.²⁸ Idaho will not approve a remote dispensing site if the proposed site is located within the same community as a retail pharmacy.⁵

In most states, facility specifications do not distinguish between remote and nonremote pharmacy locations. Some states (Arizona, Louisiana, Wyoming) establish a minimum size for the remote site. Two states (California, Iowa) impose a maximum distance between the remote location and the central pharmacy location.²⁸ Louisiana limits a central pharmacy to supervising no more than two remote dispensing sites.⁵

Most states limit the type of pharmacy staff who are permitted to work at a remote-dispensing location, but they differ by state.²⁸ All require a remotely supervised pharmacy technician. In eight states, a pharmacy intern or technician trainee is also permitted to work with remote supervision, while Illinois permits student staff.²⁸ Most states require additional qualifications for pharmacy technicians at remote-dispensing locations, typically certification, additional training, and work history, including minimum hours worked, and a minimum number of years of experience.²⁸ Some states, in response to the COVID-19 pandemic, permit personnel to perform some duties from home.

Most states establish maximum staffing ratios on the number of technicians a supervising pharmacist may oversee at one time. These range from 2:1 to 6:1. Two states (ID and VT) have no staffing ratio parameter.²⁸

Ten states restrict all telepharmacy activity and supervision to within the state. These states require that a telepharmacy site must be licensed by the state and be located within the state.²⁸ Illinois and Vermont explicitly permit out-of-state pharmacies to supervise remote-dispensing sites, while three states will grant non-resident pharmacists licensure for telepharmacy supervision.²⁸ Iowa, for example, requires that a pharmacy must demonstrate to the board that there is limited access to pharmacy services in the community where the remote site is located.²⁹

Some federal regulations also impact telepharmacy. In March 2020, the Centers for Medicare & Medicaid Services (CMS) announced waivers of some rules and granted healthcare providers more flexibility to use everyday technology during the COVID-19 public health emergency.^{25,30} Significantly, CMS issued a "Notification of Enforcement Discretion" to temporarily relax the prohibition and penalties for the use of previously non-HIPPA compliant communication platforms "in connection with the good faith provision of telehealth using ... non-public facing audio or video communication products during the COVID-19 nationwide public health emergency."¹² As a result, telehealth entities could use popular applications, including Skype, FaceTime, Zoom, Google hangouts, and others, although Facebook, Twitch, TikTok, and similar video communication applications remain unapproved.¹²

Telepharmacies that dispense controlled substances must comply with the Controlled Substances Act and are subject to the Drug Enforcement Administration's (DEA) regulations.¹³ The DEA considers telepharmacies to be online pharmacies since they utilize the internet to dispense controlled substances and are therefore subject to the Ryan Haight Online Pharmacy Consumer Protection Act (RHA).^{13,31} The RHA was enacted because of the recognition that the use of prescription controlled substances for non-medical purposes was increasing, especially among adolescents, and this was being exploited by drug trafficking on the internet.³² The intent of the act was to target rogue internet pharmacies and the prescribing of controlled substances online.²⁸ Two areas of the act with particular relevance are requirements that practitioners conduct an in-person medical evaluation before prescribing controlled substances using the internet and that online pharmacies obtain a modified registration from the DEA before dispensing controlled substances.^{13,32}

The DEA is considering promulgating revised regulations specifically dealing with telepharmacies since they are not defined in the CSA nor by DEA.³¹ Some advocates argue that telepharmacies more closely resemble traditional pharmacies than online pharmacies based on the level of pharmacist oversight and management and should be regulated accordingly.¹³

Summary

The delivery of pharmacy care to patients via telecommunications has been practiced in the U.S., for many decades. Originally conceived to serve remote, rural communities, telepharmacy has been expanding to reach other underserved areas and was further spurred by the social and public health conditions created by the COVID-19 pandemic.

Telepharmacy is defined as the use of telecommunications technology in pharmacy practice in which pharmacists or pharmacy staff conduct or oversee the different aspects of pharmacy operations or patient-care services from a long distance.

There are clear benefits to telepharmacy. Telepharmacy services provide pharmacy access to rural communities that would be underserved without it. Telepharmacy also provides pharmacists with more opportunities to deliver clinical services. Patient response to telepharmacy has been positive, and its potential use in promoting beneficial lifestyle changes in patients has been recognized. Also, telepharmacy provides a vehicle for the delivery of pharmacy services when mandatory social distancing is instituted.

While telepharmacy offers many benefits to patients and pharmacists, there are also disadvantages and barriers to its use. These include the impact that telepharmacy may have on empathy and the pharmacist-patient relationship, telesecurity and HIPAA compliance within telepharmacy, computer or technological literacy, monopolization of telepharmacy by national pharmacies, and the issues due to the different state and federal laws applicable to telepharmacy.

Laws and regulations governing the practice of telepharmacy are also evolving, with more states adopting the concept and federal and state laws being revised to facilitate its utilization.

The benefits from the utilization of telepharmacy, and the general positive reception patients have toward it, make it likely that telepharmacy is a permanent fixture in the field of pharmacy.

Course Test

1. Telepharmacy was initially approved in order to

- a. provide pharmacy services to Native American homelands.
- b. provide pharmacy services to remote rural regions that experienced pharmacy closures.
- c. provide pharmacy services during COVID-19 lockdowns.
- d. enhance communications among different healthcare professionals.

2. How much of the U.S. population resides in rural areas?

- a. Less than 10%
- b. About 20%
- c. About 1 in 3
- d. Roughly half

3. True or False: California was the first state to establish regulations for telepharmacy.

- a. True
- b. False

4. Which of the following is correct regarding pharmacy Kiosks?

- a. Kiosks are permitted in only one state
- b. Kiosks first emerged in response to COVID
- c. A pharmacist can authorize dispensing of medication from a kiosk remotely via an audio-visual link
- d. Kiosks act as vending machines with no pharmacist oversight

5. How many states currently have regulations that explicitly approve telepharmacy?

- a. None
- b. Fewer than 10
- c. About half
- d. All but one

6. True or False: The use of telepharmacy increased during the COVID pandemic.

- a. True
- b. False

7. Which of the following is INCORRECT regarding state restrictions on remote pharmacies?

- a. Most states require technicians at remote sites to be certified.
- b. Most states have location restrictions on remote pharmacies, typically at least 10-20 miles away from the nearest traditional pharmacy.
- c. No state permits out-of-state pharmacies to oversee remote pharmacy sites.
- d. Some states permit pharmacists to supervise up to six technicians remotely.

8. Which of the following was a regulatory change by the CMS during the COVID-19 pandemic?

- a. Waiving penalties for the use of certain HIPAA non-compliant teleconferencing platforms
- b. Permitting Medicare patients to use any app for communication with a healthcare practitioner
- c. Restricting telepharmacy to regions of low pharmacy density
- d. Permitting the use of telepharmacies, but only for refills

9. What is the Ryan Haight Online Pharmacy Consumer Protection Act intended to do?

- a. Regulate mail-order pharmacies
- b. Limit the number of supervised technicians in remote pharmacy sites
- c. Place limitations on prescribing opioids during the COVID emergency
- d. Limit prescribing of controlled substances over the internet

10. Which of the following describes the DEA's position on telepharmacies?

- a. The DEA considers telepharmacy operations to be online pharmacies
- b. The DEA has a specific legal definition of telepharmacy
- c. The DEA does not have any jurisdiction over telepharmacies
- d. The DEA does not permit dispensing of controlled substances by remotely operated pharmacies

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