Pharmacy Law

The Evolving Telepharmacy Dispensing Landscape

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Telepharmacy, particularly remote dispensing, is emerging as a transformative solution to pharmacy deserts by expanding access to medications in both rural and urban underserved communities. Between 2010 and 2021, over 29% of U.S. pharmacies closed, a crisis that has only accelerated. Since 2019, over 7,000 pharmacies have shuttered, with more than 2,200 closing in 2024 alone, averaging eight closures per day. These closures have disproportionately affected low-income, black, and Latino communities, accelerating the emergence of pharmacy deserts and threatening medication adherence, chronic disease management, and preventive care access. Given that CVS, Walgreens, and Rite Aid collectively plan to close more than 3,000 additional stores by 2027, telepharmacy is no longer an emerging option; it is an urgent necessity.

Evidence shows measurable improvements in medication adherence, chronic disease outcomes, and patient satisfaction with telepharmacy, underscoring its potential as a pillar of health equity. The fragmented regulatory environment, with 28 states permitting some form of telepharmacy while 22 restrict or prohibit it, however, creates significant compliance, licensing, and operational challenges, especially around interstate practice and controlled substance dispensing. To unlock telepharmacy's full potential, policymakers and healthcare leaders should harmonize state laws, expand reimbursement models, and support technological innovation, such as secure kiosks, artificial intelligence (AI)–driven adherence tools, and cross-state licensure compacts.

Bridging Gaps in Medication Acccess

Remote dispensing, commonly known as telepharmacy, is a method of dispensing medications wherein, through secure, real-time audiovisual technology, a licensed pharmacist at a central hub supervises medication dispensing at remote spoke sites operated by certified pharmacy technicians or automated systems. The hub pharmacist manages prescription verification, drug utilization review, and patient counseling via live video. Spoke-site technicians manage physical tasks, such as labeling and inventory, under constant supervision.

Telepharmacy continues to revolutionize pharmacy services in rural and urban underserved pharmacy desert areas. It not only broadens patient access to essential medications without necessitating an on-site pharmacist, but also addresses pharmacist shortages and pharmacy closures, which are exacerbated by economic pressures and workforce challenges. For residents who lose their local pharmacy, the consequences are severe: they face significant barriers to obtaining critical medications, vaccinations, and pharmacist-led care. Delays in medication adherence can worsen chronic conditions, increase hospitalizations, and result in poorer overall health outcomes—a burden that falls hardest on socially vulnerable communities. The following sections will explore how this technology functions, the varied regulatory landscape it operates within, and its measurable impact on patient care.[1]

Fragmented State-by-State Telepharmacy Regulations

The adoption of telepharmacy, while promising, is complicated by fragmented regulations. As of 2025, 28 states permit some form of telepharmacy, while 22 restrict or do not explicitly authorize its use. This fragmented environment forces multistate operators to adopt tailored compliance strategies, including separate licensing, technology audits, and multiple supervision models.

Among the more permissive states, Texas allows telepharmacy in rural counties with populations under 50,000 or in designated shortage areas, although it prohibits the remote dispensing of controlled substances. Michigan permits spoke sites to operate within 150 miles of a hub pharmacy provided that there is continuous audiovisual supervision. Arizona offers flexibility for hospital-based telepharmacy but maintains stricter rules for retail settings, including technician certification and

inventory controls. Kansas has taken a broad approach, defining telepharmacy to include real-time care via telecommunications while requiring compliance with new security and staffing criteria. Missouri authorizes remote dispensing sites located at least 10 miles from existing pharmacies, with certain exceptions for facilities such as mental health centers. In Ohio, a new law effective in April 2025 established licensing rules for remote dispensing sites, reflecting the state's response to widespread pharmacy closures. Even in permissive states, restrictions are common.

By contrast, other jurisdictions remain restrictive or prohibitive. Retail telepharmacy is expressly prohibited in New York, Massachusetts, and Rhode Island. In addition, many states—including Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Nevada, New Hampshire, New Jersey, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Virginia, Washington, and West Virginia—either lack comprehensive telepharmacy laws or impose geographic and operational restrictions so severe that widespread adoption is effectively limited.[2]

Supervision and Operational Compliance

Beyond the geographic and authorization rules, the core of telepharmacy's regulatory framework lies in ensuring patient safety and quality of care. The following section examines the complex web of supervision requirements that states have implemented to achieve a balance between operational flexibility and maintaining high standards.

Supervision by a Licensed Pharmacist: State telepharmacy supervision requirements and ratios vary, but they generally involve regulations on pharmacist oversight, remote dispensing, technician roles, and technology standards. All states that permit telepharmacy require that a licensed pharmacist ultimately supervises all operations; however, states vary on the level of pharmacist oversight that is required. Some states mandate real-time video supervision for dispensing, while others allow asynchronous oversight or local technician support under remote guidance. In most states, a licensed pharmacist—either on-site or remote—must oversee all telepharmacy operations.

Physical Presence Requirements: Some state laws (e.g., California) require a pharmacist to spend a set number of hours each week physically present at the telepharmacy location, ensuring hands-on involvement. Others (e.g., North Dakota) permit entirely remote supervision, allowing pharmacists to review and approve prescriptions via secure telepharmacy technologies without ever being on-site.

Pharmacist-to-Pharmacy Technician Ratios and Roles: States often set specific pharmacist-to-technician ratios. For instance, California allows a pharmacist to supervise up to two technicians at a remote site in addition to those at the supervising pharmacy. Other states, such as Louisiana and Mississippi, enforce restrictive 1:1 ratios, while Utah also has a limit of 1:2 for telepharmacy locations. Idaho and Vermont have no specific ratio requirements, offering more flexibility. Most jurisdictions allow technicians to perform tasks such as dispensing and labeling medications under real-time video remote supervision by a supervising pharmacist. Some require these technicians to undergo additional certification or training that is tailored to telepharmacy settings, however.

Licensing and Operational Requirements: Most states require separate licensing for telepharmacy sites and pharmacists/pharmacy technicians. States such as Georgia require a separate license and fee for the installation of remote dispensing units. Nevada requires both the central pharmacy and remote sites to be licensed. Some states permit coordination across state lines under strict licensing conditions. For example, North Dakota allows remote sites or central pharmacies in contiguous states if they are properly licensed. Certain states go further, requiring the supervising pharmacist to hold licenses in both the state where the telepharmacy operates and in their own physical location, should these differ.

Facility and Site Requirements: Many states limit telepharmacy to specific designated settings or types of facilities, such as clinics, Federally Qualified Health Centers (FQHCs), hospitals, or approved remote pharmacies. For example, in Georgia, a pharmacist must secure a special license to install and operate automated kiosks, and these are permitted only in licensed skilled nursing facilities or hospices.

Technology and Security Requirement: States generally require industry-standard technology and security measures. Almost all require a live, two-way audio and video communication system between pharmacists and patients or technicians. Furthermore, electronic prescription processing systems must adhere to HIPAA and state pharmacy board regulations, ensuring privacy and security. Comprehensive recordkeeping of all remote interactions and prescriptions is also a standard requirement.

Patient Counseling Requirements: One consistent element across most jurisdictions is the requirement that patients have access to pharmacist counseling. Whether in-person or through telepharmacy systems, states mandate that pharmacists remain available to counsel patients about their medications.[3]

Navigating Geographic and Service Restriction Boundaries

In addition to the operational and supervision requirements, telepharmacy is often governed by a specific set of geographic and service area restrictions. These regulations, which vary significantly by state, are designed to address access gaps while managing competition with traditional pharmacies. Key restrictions and state-specific exceptions are summarized in the following sections.

Geographic Restrictions (Underserved/Rural Areas): Many states have implemented policies that limit telepharmacy operations to rural or medically underserved areas, aiming to improve prescription access where traditional pharmacies are absent. For instance, Texas permits telepharmacies only in counties with populations under 50,000 people or in regions classified as medically underserved. North Dakota, which initially restricted telepharmacy to rural zones, has since broadened its scope to allow wider use. Similarly, Idaho allows telepharmacies exclusively in areas where patients would otherwise need to travel more than 20 miles to reach the nearest pharmacy. California, meanwhile, limits remote dispensing site pharmacies to medically underserved regions, with the supervising pharmacy no more than 150 road miles away (Cal. Bus. & Prof. Code §§ 4130-4135).

Distance Requirements From Parent Pharmacy: Several states have specific distance requirements for remote dispensing sites in relation to their supervising pharmacies. In Kansas, such sites must be within 50 miles of the supervising pharmacy, while Oklahoma sets the limit at 60 miles from the supervising pharmacist's primary location. California allows supervising pharmacies to be up to 150 road miles away from remote dispensing sites, and Michigan permits spoke sites to operate within 150 miles of a hub pharmacy provided that there is continuous audiovisual supervision. Missouri, on the other hand, enforces a minimum distance of 10 miles between remote dispensing sites and existing pharmacies to protect current establishments rather than specifying a maximum distance from the supervising pharmacy.

Prohibitions in Urban or Well-Served Areas: To prevent competition with traditional brick-and-mortar pharmacies, some states explicitly prohibit the establishment of telepharmacies in urban areas. Arkansas enforces a ban in counties with populations exceeding 20,000 residents, while Montana only authorizes telepharmacies in regions where the nearest pharmacy is at least 10 miles away.

Restrictions Based on Pharmacy Type: Rules also differentiate between types of pharmacies. Hospital-based telepharmacies are sometimes allowed to serve broader geographic areas, especially when supporting outpatient clinics.

Interstate Telepharmacy Restrictions: Most states maintain that the supervising pharmacist must hold a license in the state where the telepharmacy operates. Some states, such as Maine and Vermont, however, have established reciprocity agreements that permit out-of-state pharmacists to supervise telepharmacies under specific conditions.[4]

Legal and Operational Barriers to Expansion

Telepharmacy's full potential is hindered by significant legal and operational hurdles. The following section explores two of the most critical barriers to expansion: interstate licensing and the dispensing of controlled substances.

Interstate Licensing: Interstate licensing remains one of the most significant barriers to scaling telepharmacy, as supervising pharmacists are

typically required to hold licenses in both their home state and the state where the remote dispensing site operates. This dual-licensure mandate creates administrative burdens, delays, and additional costs, particularly for health systems and pharmacy chains operating across state lines. While most states maintain strict in-state licensing requirements, only five states have explicit reciprocity or exemptions, leaving cross-border models unviable in regions such as the Southeast.

Idaho, through Idaho Code § 54-5707, permits out-of-state pharmacists to supervise telepharmacy operations provided that they meet Idaho's licensing standards and complete registration with the state board. Idaho mandates that supervising pharmacists must be physically located in a designated "patient care center," such as a hospital, when reviewing prescriptions. This approach has proven particularly valuable for rural clinics along Idaho's borders, enabling partnerships with pharmacists from neighboring states such as Oregon and Utah to expand medication access in underserved Idaho communities.

Oregon, through Or. Admin. R. 855-139-0005, allows remote supervision by pharmacists licensed in other states, although with important safeguards. Out-of-state pharmacists must complete Oregon-specific training and strictly adhere to the state's dispensing protocols. Oregon further ensures quality care by requiring real-time audiovisual counseling for all patients.

In the Northeast, Maine and Vermont are piloting an innovative reciprocity compact that represents a potential model for regional solutions. Their agreement permits pharmacists licensed in either state to supervise telepharmacy sites across their shared border. This initiative specifically targets rural areas where patients might live closer to a pharmacist in the neighboring state than to one in their own state, effectively creating a seamless multistate service area.

Kansas, through K.A.R. 68-7-20, permits out-of-state pharmacists to supervise telepharmacies. The state requires these professionals to pass a Kansas jurisprudence examination and maintain a special "consultant pharmacist" license. Kansas also imposes geographic limitations, restricting remote dispensing to sites within 50 miles of the supervising hub pharmacy.

These state-level experiments demonstrate various approaches to overcoming the interstate licensing hurdle, from Idaho's patient care center requirement to Oregon's training mandates and the Maine-Vermont reciprocity model.

Controlled Substances: The remote dispensing of controlled substances (Schedule II–V drugs) remains one of the most tightly regulated aspects of telepharmacy. The Drug Enforcement Administration's 2023 temporary waivers—later extended through 2025—eased certain restrictions to address pandemic-era care gaps. These modifications permitted limited remote dispensing of Schedule III–V medications in federally designated shortage areas, although this required real-time pharmacist oversight and strict inventory tracking. These federal changes, however, did not override state laws, creating a patchwork of regulations. Most states prohibit controlled substances drug telepharmacy. Texas and Michigan allow remote dispensing of controlled substances only within hospital systems or affiliated clinics. In Arizona, Schedule II drugs (e.g., opioids, attention-deficit/hyperactivity disorder medications) cannot be dispensed remotely at all, while III–V substances require dual verification by both the remote pharmacist and an on-site provider. Even where allowed, most states (e.g., Ohio) require live video counseling for controlled substances, creating operational hurdles for some telepharmacy models (e.g., fully automated kiosks).[5]

Urban Pharmacy Deserts

Pharmacy deserts—commonly defined as low-income urban areas where residents must travel over a mile or rural areas where the journey is over 10 miles to reach a pharmacy—are a national crisis. A seminal study in *Health Affairs Scholar* found that 15.8 million Americans (4.7% of the population) live in these deserts, which span urban (57.5%), rural (38.1%), and suburban (4.4%) areas. These communities are characterized by higher poverty, lower educational attainment, and larger proportions of black, Hispanic, and indigenous residents. This aligns with findings that counties with high pharmacy desert density have significantly higher social vulnerability indices and fewer primary care providers, creating a perfect storm of healthcare inequity.[6,7]

Recent studies confirm that pharmacy deserts correlate with social vulnerability and fewer pri-

mary care providers. Counties with high pharmacy desert density also face elevated poverty, higher proportions of elderly residents, limited English proficiency, and increased chronic disease burden. This lack of access results in reduced adherence, increased emergency department (ED) visits, absenteeism, and rising healthcare costs.[8]

Pharmacy deserts are expanding owing to a combination of economic pressures and workforce challenges. The closure of over 2,200 pharmacies in 2024 alone—averaging eight per day—has disproportionately impacted low-income, black, and Latino urban communities, exacerbating healthcare inequities. The following section quantifies the scale of this problem and demonstrates how telepharmacy is being used to restore critical access to care in metropolitan areas.

Telepharmacy in Action

Telepharmacy is increasingly recognized as a scalable solution to address the growing crisis of pharmacy deserts. Urban telepharmacy initiatives employ several technological approaches, including real-time video consultations, automated dispensing units, hub-and-spoke models, and mobile integration.[9] The following real-world examples demonstrate telepharmacy's adaptability and impact in diverse urban settings and demonstrate diverse implementation models across major metropolitan areas:

Chicago: Independent pharmacies integrated telepharmacy into community clinics, improving adherence and eliminating transportation barriers for nearly 1 million residents.

Detroit: FQHCs used telepharmacy in senior centers and clinics, reducing ED visits and improving diabetes and hypertension management.

New York City: Hospital-affiliated telepharmacies in the Bronx and East Harlem reduced readmissions by integrating medication access into discharge planning.

Baltimore: Community workers staffed kiosks in public housing, addressing health literacy barriers among seniors.

Philadelphia: School-based health centers deployed telepharmacy to improve asthma and ADHD management.

San Francisco: After Walgreens closures, kiosks and mobile units sustained medication access with high satisfaction ratings.[10]

Mail-Order Versus Telepharmacy

While the expansion of mail-order pharmacy can help bridge gaps in access for maintenance medications, it is an incomplete solution that cannot fully substitute for in-person or telepharmacy services. Mail-order models inherently limit spontaneous pharmacist consultations, delay urgent prescription fills, and do not provide critical services such as immunizations, point-of-care testing, or chronic care management. For patients in socially vulnerable communities who may lack reliable broadband Internet or mailing addresses, mail-order can be inaccessible.

By contrast, telepharmacy preserves the essential element of pharmacist-led counseling and services while overcoming the same geographic barriers. It offers a hybrid model that provides immediate access and professional guidance. For true health equity, policymakers should support the expansion of telepharmacy *alongside* mail-order options, not in place of it.

Measurable Healthcare Outcomes

Telepharmacy improves medication adherence by 15% to 25%, with Medicaid populations showing adherence gains of 28%. Elderly patients saw medication adherence rise from 68% to 89% with telepharmacy. Chronic disease outcomes improved substantially: Diabetic patients achieved HbA_{1C} reductions nearly triple those seen in traditional settings, and hypertensive patients experienced double the improvement in blood pressure control.

Low-income patients, particularly in Medicaid populations, benefit disproportionately from extended hours and reduced transportation barriers. Patients with mobility limitations report 94% satisfaction and 25% higher adherence than peers. Racial and ethnic minorities using culturally tailored telepharmacy platforms also report markedly higher adherence, with bilingual models driving adherence rates of 91% compared with 72% in traditional settings.

Taken together, these outcomes highlight telepharmacy as not merely a technological convenience but a transformative model of care delivery that improves access, enhances safety, elevates patient experience, and reduces systemic strain.[11,12]

Market Growth and Future Trends

The success of existing telepharmacy models hold promise for explosive market growth and further

innovation, with projections estimating a compound annual growth rate of approximately 20.4% between 2025 and 2031. This section explores the key drivers behind this expansion, from marketing opportunities to technological advancements.

The telepharmacy market growth trajectory reflects a convergence of demographic, technological, and policy factors that are reshaping the way pharmacy services are delivered and accessed. Urbanization, coupled with increasing healthcare access initiatives, continues to drive demand for innovative solutions that can bridge geographic, financial, and resource-based barriers to care.

Hospitals, integrated delivery networks, and retail pharmacy chains are increasingly leveraging telepharmacy platforms to extend pharmacist coverage, enhance medication therapy management, and ensure round-the-clock access to pharmaceutical expertise.

Private equity has invested in advanced digital platforms that enable secure medication dispensing, remote verification, AI-assisted clinical decision support, and interoperable electronic health records. Emerging tools, such as predictive analytics and remote monitoring devices, are further positioning telepharmacy as an essential component of personalized and data-driven care.

Lastly, policy advocacy and regulatory evolution remain essential enablers of market growth. Continued efforts to expand telepharmacy authorization, standardize licensure across state lines, and update reimbursement models are creating a more supportive environment for scaling services.[13]

Unlocking Telepharmacy's Potential

The following recommendations outline specific steps to overcome existing barriers and fully integrate telepharmacy into the healthcare ecosystem. To ensure that telepharmacy can reach its full potential, policymakers must take decisive action to create a more supportive and standardized regulatory environment. Evidence for the effectiveness of permissive policies is clear. A 2023 study in *JAMA Network Open* found that states that implemented less restrictive telepharmacy laws saw an 11.1% relative decrease in the population living in pharmacy deserts.[7] Furthermore, when a telepharmacy opened near a desert, 37.5% of those areas transitioned to nondeserts the following year. These data provide a powerful mandate for policymakers to harmonize and expand telepharmacy regulations.

Technological advancements are accelerating the capabilities of telepharmacy. Self-service kiosks, equipped with secure dispensing technology and remote pharmacist access, are emerging as scalable solutions for both urban and rural settings. AI and predictive analytics are being applied to medication adherence, enabling systems to proactively identify at-risk patients and intervene before gaps in therapy lead to adverse health outcomes. These innovations also raise important regulatory questions, however, particularly regarding pharmacist verification, error prevention, and alignment with frameworks such as the National Association of Boards of Pharmacy Model State Pharmacy Act.

Policy and legislation are also key to the future landscape. Federal efforts such as the proposed Pharmacy Access Act aim to harmonize the patchwork of state regulations by establishing national guidelines for telepharmacy practice. Such frameworks could address critical issues, including interstate licensure, reimbursement models, and prescription drug monitoring program interoperability. Despite progress, regulatory variation remains a challenge, with 22 states still lacking comprehensive telepharmacy rules. This fragmented environment underscores the importance of ongoing advocacy.[14]

Conclusion

With more than 2,700 pharmacies closed in the past 2 years, the pace of closures demands rapid telepharmacy adoption. Unless policymakers expand telepharmacy access, pharmacy deserts will continue to widen, worsening adherence, equity gaps, and healthcare costs. Telepharmacy must be viewed not as a stopgap but as a structural solution that strengthens healthcare system resilience and ensures equitable access to essential medications and pharmacist-led services.

By bridging access gaps in both rural and urban communities, telepharmacy is positioned to be a central pillar of health equity strategies. Collaborative action among policymakers, payers, and providers can ensure this model is integrated into the broader healthcare ecosystem to meet the evolving needs of diverse populations.

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