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Review

Pharmacists providing care in the outpatient setting through telemedicine models: a narrative review

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Abstract

Telemedicine refers to the delivery of clinical services using technology that allows two-way, real time, interactive communication between the patient and the clinician at a distant site. Commonly, telemedicine is used to improve access to general and specialty care for patients in rural areas. This review aims to provide an overview of existing telemedicine models involving the delivery of care by pharmacists via telemedicine (including telemonitoring and video, but excluding follow-up telephone calls) and to highlight the main areas of chronic-disease management where these models have been applied. Studies within the areas of hypertension, diabetes, asthma, anticoagulation and depression were identified, but only two randomized controlled trials with adequate sample size demonstrating the positive impact of telemonitoring combined with pharmacist care in hypertension were identified. The evidence for the impact of pharmacist-based telemedicine models is sparse and weak, with the studies conducted presenting serious threats to internal and external validity. Therefore, no definitive conclusions about the impact of pharmacist-led telemedicine models can be made at this time. In the Unites States, the increasing shortage of primary care providers and specialists represents an opportunity for pharmacists to assume a more prominent role managing patients with chronic disease in the ambulatory care setting. However, lack of reimbursement may pose a barrier to the provision of care by pharmacists using telemedicine.

Keywords

Telemedicine; Rural Health Services; Rural Health; Chronic Disease; Pharmacies; Pharmacists; United States

INTRODUCTION

Since the birth of the internet in the late 1950s, technological advancements have attempted to address disparities in access to health care in the United States (US).[1] One such technological advancement that has continued to grow is the utilization of telehealth. The terms telehealth and telemedicine have been used interchangeably to comprise a wide definition of remote healthcare.[2] However, several organizations provide distinct definitions for each term. While telemedicine refers to the provision of remote clinical services, telehealth encompasses a broad scope of health care services, including clinical (telemedicine) and non-clinical services such as training and education that are provided at a distance.[3,4] The American Telemedicine Association defines telemedicine as “the use of medical information exchanged from one site to another via electronic communications to improve patients' health status”.[5] Specifically, telemonitoring (remote home monitoring) consists of real-time clinical data collection from the patient that is transmitted to a medical professional remotely located who monitors clinical parameters and intervenes as clinically indicated. Importantly, telemonitoring does not encompass a face-to-face interaction.[6] Definitions of other terms associated with telehealth have been compiled in Table 1.

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Telemedicine has typically been used to address disparities in access to health care in remote/rural areas.[7] Despite high annual health expenditures, it is estimated that as of 2016 at least 20% of the US population did not have equal access to health care.[7] Also of note, rural areas house 20% of the US population, yet only 9% of physicians practice in these areas.[7] The American Telemedicine Association estimates that there are over 200 telemedicine networks nationwide providing health care services to approximately 3,000 remote or underserved sites.[5] In addition to rural areas, telemedicine services have also expanded into prisons, military bases, and school systems.[8] Data from Kaiser Permanente, an integrated health system in the US, revealed that roughly 110 million medical visits were conducted in 2015, of which 59 million were conducted on-line, over the internet, or by using mobile devices, accounting for 52% of patient visits.[9] Kaiser Permanente of Northern California discovered that while promoting the use of telehealth services increased the number of healthcare visits by roughly six million over the course of five years, the overall goal of the telehealth structural model should be to reduce healthcare expenditures in the long-term.[10] Another one of the biggest advocates for the

Table 1. Definitions of terms associated with telehealth.

Term	Definition
Telehealth	The term telehealth is used to encompass a broader definition of remote healthcare that does not always involve clinical services.[5]
Telemedicine	Telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve patients' health status.[5] Telemedicine is the use of two-way real-time interactive audio and video between places of lesser and greater medical capability or expertise to provide and support health care, when distance separates participants who are in different geographical locations.[44]
Telecare	Telecare is the term that relates to technology that enables patients to maintain their independence and safety while remaining in their own homes. This technology includes mobile monitoring devices, medical alert systems, and telecommunications technology like computers and telephones. Continuous remote monitoring of patients enables telecare to track lifestyle changes over time as well as receiving alerts relating to real-time emergencies.[3]
Teleconsultation	Consultation between a provider and specialist at distance using either store and forward telemedicine or real-time videoconferencing.[5]
Telementoring	The use of audio, video, and other telecommunications and electronic information processing technologies to provide individual guidance or direction.[5]
Telemonitoring	The process of using audio, video, and other telecommunications and electronic information processing technologies to monitor the health status of a patient from a distance.[5]
Telepharmacy	Telepharmacy is defined as the provision of pharmaceutical care to patients through the use of telecommunications and information technologies.[45]
Store-and-Forward "Asynchronous Communication"	Type of telehealth encounter or consult that uses still digital images of patient data for rendering a medical opinion or diagnosis (e.g. in radiology, pathology, dermatology, ophthalmology, and wound care). Store and forward includes the asynchronous transmission of clinical data from one site to another (e.g. email).[5]

use of telemedicine is the Veterans Health Administration[11], with their national telehealth programs having served over 600,000 veterans, corresponding to more than two million telehealth visits performed in 2014.[12]

In addition to increasing access to health care, telemedicine models are also a means of providing convenience to patients, diagnosing and monitoring of various acute and chronic health conditions, improving health care quality, and reducing costs.[13] A 2016 report from the Agency for Healthcare Research and Quality (AHRQ) compiled evidence on the provision of clinical services through telemedicine from 58 systematic reviews. Sufficient evidence exists on the effectiveness of telehealth to remotely monitor, communicate with and counsel patients with chronic conditions such as cardiovascular and respiratory disease, resulting in improvements in outcomes including mortality, quality of life, and reductions in hospital admissions.[14] Evidence of positive outcomes while delivering psychotherapy via telehealth as part of behavioral health has also been demonstrated.[14] As far as costs are concerned, De la Torre-Diez and colleagues[15] performed a systematic review on the cost-effectiveness of telemedicine, e-health, and m-health across different fields of medicine and concluded that while some studies demonstrated that telemedicine was cost-effective, the presence of a multitude of variables across studies made it difficult to definitively state that telemedicine is cost-effective. Limitations of the studies analyzed include: disparate estimation methods, lack of randomized controlled trials, lack of long-term evaluation studies, small sample sizes, and absence of quality data and appropriate measures.[15]

BILLING FOR TELEMEDICINE IN THE US

While the Centers for Medicare and Medicaid Services (CMS) recognize telemedicine as a billable service, the process of billing for telemedicine services is at the discretion of each State's Medicaid program. As per Medicare, the reimbursement policy is limited to select services provided by a specific set of providers, and 'originating' and 'distant' sites.[16] Currently, the recognized health care professionals that can use Current Procedural Terminology (CPT) billing codes for reimbursement of telemedicine services under Federal Regulations include: physicians, physician assistants, nurse practitioners, clinical nurse specialists, nurse mid-wives, clinical psychologists, clinical social workers, registered dieticians, and certified registered nurse anesthetists.[17,18] Seventeen states and the District of Columbia do not specify the type of healthcare provider allowed to provide telemedicine as a condition of payment under Medicaid.[19] In order for telemedicine services to be covered by CMS, patients must live in rural Health Professional Shortage Areas (HPSA), outside of a Metropolitan Statistical Area (MSA), or in a rural area as defined by the area's census.[16]

Despite having set the precedent of reimbursing care delivered by telemedicine models, Medicaid and Medicare are not the only payers that cover telemedicine services. Private health insurance companies have followed suit and cover specific telemedicine services depending on the State, as well as the patient's health insurance plan.[20-25] These private payer insurance companies have health parity laws in place across 29 States as well as the District of Columbia as of January 2016, which means that they are required to pay the same fee for a telemedicine service as they would for a face-to-face visit.[19] For example, Virginia's Parity law only mandates coverage of live video telemedicine services by private insurance companies, while CMS covers live video telemedicine, as well as store-and-forward (see definition on Table 1) for diabetic retinopathy and dermatological services.[19] While only 29 states plus the District of Columbia currently have private payer parity laws in place, the number is growing with eight more states pending approval of their own parity laws.[26]

TELEMEDICINE MODELS INVOLVING PHARMACISTS

The role of pharmacists in telemedicine models was first documented in the early 2000s[27] and since then the literature showing the impact of these models has been expanding. Pharmacists have played a critical role in improving access to clinical pharmacy services in rural areas.[28] A claims data analysis from the Veterans Health Administration revealed that provision of video telepharmacy services was substantially higher in rural clinic patients compared to medical center patients.[28] A study from Australia within the inpatient setting demonstrated that telepharmacy was as effective as face-to-face medication reviews in identifying problems related to medication in patients at rural inpatient facilities lacking an on-site pharmacist.[29]

A recent systematic review by Niznik and colleagues[30] identified 34 studies assessing the impact of pharmacist services via telemedicine in the outpatient setting. In over 70% of the studies included, the pharmacist intervention was delivered over the telephone with the remaining studies describing interventions delivered via video consultation, text or electronic messaging, email, automated electronic reports or fax. Pharmacists performed post-discharge follow-ups, medication counseling, virtual disease management as part of a multidisciplinary team, remote monitoring of lab values and vital signs (telemonitoring), medication therapy management, automated text message reminders or phone calls, and instructional videos. The disease-states for which pharmacists provided care included: hypertension, diabetes, anticoagulation, depression, hyperlipidemia, asthma, heart failure, human immunodeficiency virus infection, post-traumatic stress disorder, chronic kidney disease, stroke, chronic obstructive pulmonary disorder, and smoking cessation.[30]

The goal of the present review is to highlight the main studies describing pharmacists providing care via telemedicine in chronic disease management in the ambulatory setting. Contrary to the systematic review conducted by Niznik and colleagues[30], this review will emphasize studies that involve telemonitoring and video consults, rather than simple follow-up interventions over the telephone, even though these may also be considered telemedicine. The areas wherein studies assessing the impact of pharmacists providing care via telemedicine have been conducted include: hypertension, diabetes, asthma, anticoagulation, and depression.

Hypertension

The role of pharmacists in improving clinical outcomes in patients with hypertension has been widely documented in the literature.[31] Although few trials have been performed evaluating the impact of providing clinical pharmacy services through telemedicine models, two large randomized controlled trials demonstrated the effectiveness of a combination of home blood pressure telemonitoring with pharmacist care on hypertension control in a primary care setting.[32,33]

The Electronic Communications and Home Blood Pressure Monitoring (e-BP) study was a single-site, three-arm randomized controlled trial that included 730 patients with uncontrolled hypertension for 12 months to observe the impact of combining home-based blood pressure monitoring, website training for an online patient portal, and pharmacist care management on the reduction of blood pressure. The three arms of the study consisted of: 1) usual care (n=247), 2) home blood pressure monitoring and website training (n=246), and 3) home blood pressure monitoring combined with pharmacist care management through secure e-mails and telephone calls (n=237). The ultimate goal was reduction in blood pressure to levels below 140/90 mmHg at 12 months. All groups were given an initial consultation and provided with resources, such as pamphlets, to aid in lowering blood pressure. The website training group received the additional resources of an online health portal for refill requests, additional information regarding blood pressure management, and the ability to contact their physician. The pharmacist care management group consisted of an initial visit with a pharmacist to discuss current goals and create an action plan, followed by a biweekly teleconference until the patient was at goal. After 12 months, no significant increase in the percentage of patients with controlled blood pressure between the usual care and web-based group (31% versus 36%, p=0.21) was observed, but a significant increase was verified for patients in the pharmacist intervention group compared to usual care (56% versus 31%, p<0.001). Patients with a systolic blood pressure (SBP) of 160 mmHg or greater that were randomized into the most intensive intervention, including pharmacist case-management, saw a net SBP reduction of 13.2 mmHg compared to usual care (95% CI, -19.2 versus -7.1; p<0.001) along with a net diastolic blood pressure (DBP) reduction of 4.6 mmHg (95% CI, -8.0 versus -1.2; p<0.001). The benefits observed in the pharmacist group persisted at least one year after completion of the study.[32]

A similar trial, the Home Blood Pressure Telemonitoring and Case Management to Control Hypertension (HyperLink), was conducted to determine the effect and durability of home blood pressure telemonitoring combined with pharmacist case management. Compared to the previous trial, patients in the HyperLink study presented with different degrees of hypertension severity and with other comorbidities, whereas those in the e-BP study were excluded if they had diabetes, heart disease, or other serious diseases.[32] This was a cluster randomized controlled trial with 450 patients scattered across 16 primary care clinics who had uncontrolled blood pressure over the course of 12 months, with a six-month follow-up time period to observe if the effectiveness of pharmacist-based case management and home blood pressure telemonitoring was superior to usual care for the improvement of blood pressure and whether this effect persisted past the 12-month intervention. The intervention consisted of an initial in-office visit with a pharmacist to review current blood pressure management, education on uncontrolled blood pressure, and how to use the home telemonitoring devices. Pharmacists communicated with the patients by phone every two weeks for the first six months. Communication frequency was reduced to monthly once patients had controlled blood pressure for six consecutive weeks. At 12 months, blood pressure was controlled in 57.2% of patients in the intervention group compared to 30.3% in the control group (p=0.001), and at the six-month post-intervention follow-up, 71.8% of patients in the intervention group maintained control of their blood pressure compared to 57.1% in the control group (p=0.003). Additionally, patients in the intervention group had greater antihypertensive medication intensification and better self-reported adherence. Superiority of the home blood pressure telemonitoring and pharmacist case management versus usual primary care was confirmed and persisted after study completion.[33]

One of the limitations of the previous two trials is that patients were required to have a computer with internet and email access, which may restrict the applicability of this approach.

Diabetes

Contrarily to what was found for hypertension, no large randomized controlled trials have been conducted to date assessing the pharmacists provision of care via telemedicine to patients with diabetes. Most of the studies reviewed for diabetes describe telemedicine models involving telemonitoring.[34-36] However, one study describing the impact of a real-time, clinic-based video telehealth program by pharmacists was also identified.[37]

A non-randomized parallel control study was conducted with 103 veterans with uncontrolled type 2 diabetes at four outpatient primary care clinics within the Veterans Affairs health care system. The aim of the study was to analyze the effect of pharmacists utilizing Care Coordination Home Telehealth (CCHT) for medication therapy management (n=36) versus pharmacists not utilizing CCHT (n=67) over the course of six months. The CCHT program consisted of a home monitoring device that allowed patients, pharmacists, and physicians to interact in between face-to-face follow-up visits. Patients entered their blood glucose values into their home monitor, which was then stored and retrieved by pharmacists. In the intervention group (CCHT), pharmacists had an initial face-to-face visit with the patient and two follow-up visits throughout the course of the study, and were responsible for evaluating the data from the home devices and to make appropriate changes to patients' medications under a collaborative practice agreement. The CCHT group had a significant reduction from baseline to six months in mean hemoglobin A1C (HbA1c) compared to the non-CCHT group at six months (6.9% versus 7.5%, p=0.0066), but the mean reduction in HbA1C from baseline to six months was not statistically significant between groups (p=0.1987). Goals for HbA1c (<7%) were met in 69% of CCHT patients compared to 36% in non-CCHT patients (p=0.0011). Patients in the CCHT group also had more frequent contact with the pharmacist and more antihyperglycemic drug changes. The authors discussed several advantages of telemonitoring compared to usual care telephone follow-up, including more frequent and accurate communication of blood glucose data to the provider, increased number of non-face-to-face encounters between clinic visits, and patients receiving timely feedback from a provider.[34]

An observational prospective study showed similar positive results.[36] In this study, pharmacists managed 75 patients with diabetes via telemonitoring over a six-month period (intervention group) and compared outcomes to another group of 75 patients with similar baseline characteristics identified from a registry of patients with diabetes who were seen during the same timeframe through retrospective chart review (control group). Patients who received the intervention entered their blood pressure, blood glucose and weight measurements into the telemonitoring devices when prompted and received diabetes education in the form of messages through the devices. Each telemonitoring session lasted between 5-10 minutes and took place five days a week. Pharmacists monitored the parameters entered by patients several times a day and intervened in the presence of out-of-range values. Pharmacists were able to make medication changes under a collaborative practice agreement for antihyperglycemic, antihypertensive, and lipid-lowering agents. At the end of the study period, patients in the telemonitoring group had a significant decrease in mean HbA1C levels compared to baseline (9.9% versus 7.8%, p<0.001). Significant decreases of 8.0 mmHg in the SBP (p<0.001) and 2.8 mmHg in the DBP (p=0.045) from baseline to six months were also observed, but no differences were found for low-density lipoprotein cholesterol (LDL-C) and body mass index. Compared to the control group, a significant higher proportion of patients achieved an HbA1C goal of <7% with the telemonitoring intervention (34.7% versus 14.7%, p<0.004). Patients who received the telemonitoring intervention had significantly lower mean HbA1C levels at six months (7.8 versus 8.8, p<0.001), but no differences between groups were found for SBP, DBP, LDL-C and body mass index.[36]

Another example of a telemonitoring program led by pharmacists in primary care is the study by Klug and colleagues exploring the feasibility of incorporating a home monitoring telehealth system into an existing pharmacist-led telephonic diabetes management program.[35] This was a pre- and post- study that followed 28 recently diagnosed adults with diabetes and HbA1C >8% for 16 weeks to observe the effectiveness of telephonic pharmacist intervention combined with telemonitoring for management of glycemic control and improvement of patient activation as assessed by the Patient Activation Measure. Participants had an initial in-office session with a pharmacist to provide education about the in-home devices, followed by pre-determined interval follow-up telephone calls. Before each follow-up telephone call, the pharmacist would review the recorded blood glucose, blood pressure values and patient-reported symptoms transmitted on-line from the in-home devices. Pharmacist interventions included: tailored medication therapy management recommendations, lifestyle modifications, and adjustments to diabetes and hypertension medications. At 16 weeks, HbA1C had significantly decreased compared to baseline from 9.8% to 8.5% (p=0.001). There was also a significant decrease in fasting blood glucose from 178 mg/dL to 163 mg/dL (p=0.0002). Despite significant reductions in HbA1C and blood glucose from baseline, there was no significant change in patient activation levels.[35]

In addition to diabetes telemonitoring, a study conducted at a primary care clinic of a Veterans Affairs health care system was performed to evaluate the effect of a real-time, clinic-based video telehealth program by pharmacists to manage HbA1C, LDL-C, and blood pressure for patients that did not have access to a pharmacist. This was a small prospective, pre-post pilot study including 26 veterans with diabetes over the course of six months. Pharmacists provided a 30-minute appointment via videoconference at least once every three months and reviewed patient lab values, discussed medication side effects, and adjusted medications as appropriate. A significant decrease in HbA1C from baseline was achieved (7.6% versus 9.6%, p=0.0002), but no significant changes were reported for LDL-C or blood pressure. Of note, this study was likely underpowered to show a statistically significant difference given the small sample size.[37]

Asthma

Evidence of pharmacists' impact on improving asthma care through telemedicine is sparse. A small randomized controlled study was conducted with a rural junior high and high school population where pharmacists used an interactive video to teach children and adolescents the correct technique to use metered-dose inhalers (MDI).[27] Participants were randomly assigned to either the intervention group (n=24, but 15 completed the study) receiving telepharmacy counseling or the control group (n=25, but 21 completed the study) receiving only manufacturer package inserts with diagrams on how to use the MDI. Both groups completed assessments of MDI technique at baseline, after receiving the video counseling or reviewing the inhaler package insert, and two to four weeks later, totaling three assessments. After data collection was concluded, pharmacists provided instructions as to the correct MDI technique to individuals in the control group who demonstrated poor technique. The intervention group showed a significantly greater improvement in MDI technique from pre-test to follow-up compared to the control group (scores from the MDI Technique Checklist: 3.80 to 6.73 versus 4.05 to 4.86, p<0.001). Findings from this study suggest that the use of telepharmacy may be an effective modality compared to manufacturer package inserts for educating patients on proper use of MDI.[27]

Anticoagulation

Within the area of anticoagulation, no randomized controlled trials assessing the impact of telepharmacy services have been conducted to date. The only published prospective (observational) study evaluating a telepharmacy anticoagulation clinic reported data for 38 male veterans who were enrolled in a pharmacist-managed clinical video telehealth anticoagulation clinic for six months. In this study, the telehealth anticoagulation clinic was set up to expand the reach of anticoagulation pharmacist services to different locations, replacing a face-to-face model. In the telepharmacy model, the pharmacist conducted patient interviews, provided direct patient care via video, evaluated International Normalized Ratio (INR) levels, and designed a therapeutic plan. Preliminary results of this program showed that the percentage of time in the therapeutic INR range was similar in the face-to-face and in the video clinic models (76.4% versus 80.8%). Although no generalized conclusions can be draw from this study, this is a first step in showing how the resources in a health system can be optimized to provide care to remote areas, as well as expanding the role in the urban sites that were already being served by a pharmacist.[38]

Depression

Collaborative care models in primary care delivered by a team of co-located primary care providers, mental health specialists, and care managers have demonstrated effectiveness in improving depression outcomes.[39,40] However, co-location of all the team members is not always possible. A multi-site pragmatic randomized comparative effectiveness trial was conducted with individuals from a medically underserved rural area to compare outcomes when receiving usual care or care from mental health providers who were virtually co-located and integrated into a primary care setting. Patients were randomized to either Practice Based Collaborative Care (PBCC) (n=185) comprising on-site primary care providers and nurse depression care managers, or Telemedicine Based Collaborative Care (TBCC) (n=179) where care was provided by on-site primary care providers, and off-site nurse depression care managers (telephone), pharmacist (telephone), psychologist (video), and psychiatrist (video). In this model, the role of the pharmacist was to conduct medication histories and to provide medication management as needed, however further specifics were not provided. The results of the trial showed improvement in response, remission, and depression severity for the TBCC group, which was explained by the higher fidelity of the collaborative care model in the telemedicine group.[41] The role of the pharmacist is difficult to isolate, but this study shows how pharmacists included in a multidisciplinary team can contribute to improved patient outcomes for depression.

CURRENT EVIDENCE OF TELEPHARMACY MODELS

Studies describing the combination of telemonitoring and pharmacist care were identified for the areas of hypertension and diabetes management. Other studies described the implementation and outcomes of clinic-based video telehealth programs involving pharmacists or multidisciplinary teams where the pharmacist was involved in areas such as asthma, anticoagulation, and depression. The telepharmacy models identified were primarily tested in the primary care setting.

The available evidence for the impact of pharmacist-based telemedicine models (excluding follow-up telephone calls) is sparse and weak. Only for hypertension have there been two large randomized controlled trials assessing the impact of a telemonitoring program combined with pharmacists monitoring parameters and adjusting therapy that demonstrated positive outcomes.[32,33] For most of the other studies described, no control group was used which significantly compromised the internal validity. The fact that some studies described single-site evaluations also poses a threat to the external validity. However, it is noteworthy that several of the studies reviewed were conducted in multiple sites. Small sample sizes were also a concern for some studies, as well as the sampling methods described, which were rarely random sampling.

Additionally, no data on the cost-effectiveness of telepharmacy models nor on the impact of these models for the health system in terms of total number of patients seen, total number of new patients seen, waiting times, number of no-shows, and population health measures for a given health system were reported.

Therefore, more evidence is needed to draw definitive conclusions and to fully establish the impact and value of telepharmacy models in managing the chronic disease states wherein pharmacists have already proved their added value.[31] Future studies should have an adequate sample-size, be multi-site, and have a randomized controlled design.

CHALLENGES TO THE EXPANSION OF TELEPHARMACY MODELS IN THE US

The opportunity for pharmacists' involvement in the provision of care through telemedicine models has been recognized by several professional associations such as the American Pharmacists Association (APhA) and the American Society of Health-System Pharmacists (ASHP). Recently, APhA created a Telehealth Committee while ASHP also vocalized its support of CMS funding to allocate telehealth resources to underserved rural areas to increase patient access to quality care.[42,43]

A significant barrier that limits the range of services and care that pharmacists provide in the US is reimbursement. Since pharmacists are not recognized by CMS as healthcare providers, they cannot be reimbursed for services rendered under most traditional fee-for-service arrangements. As such, many of the telehealth models involving pharmacists have been implemented in managed care organizations (e.g., Kaiser Permanente) who see the value in improving the quality of care by increasing visit frequency and follow-up to better manage patients with chronic disease. As the private sector shifts away from fee-for-service in favor of value based-care, there is likely to be increased interest from insurance payers to explore telehealth models. The current trend by CMS and others away from fee-for-service payment models in favor of quality or value-based care may create more opportunities for the expansion of telehealth services that include pharmacists in the care of patients with chronic disease.

In conclusion, pharmacists have a unique opportunity to use telemedicine models as a means to improve access to care and chronic disease management in both rural and urban populations within the ambulatory setting. More evidence for the clinical and economic impact of pharmacist-driven telemedicine models is needed to drive expansion of these models into practice. Pharmacy administration should engage health-system administrators, third-party payers, and other entities to explore opportunities for pharmacists to be involved in telemedicine models and help generate evidence for the real-world impact of these models.

CONFLICT OF INTEREST

Authors have no conflicts of interest to disclose.

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