

# Telemedicine: Impact on Pharmaceutical Care

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**Abstract:** The adoption of technology in the pharmaceutical industry has transformed how healthcare providers entirely communicate and deal with patients. Telemedicine for instance, has been able to bridge the geographical gap between patients in rural and remote areas and specialist healthcare providers. It has also been able to facilitate enhanced access to care, improve medical management and improved innovative patient education. Telemedicine has also enabled patient counselling especially where patients are critically ill or have chronic diseases. The benefits of telemedicine in the pharmaceutical industry, such as such as increased accessibility for underserved populations, enhanced medication adherence, and improved patient outcomes, cannot be overlooked. Even with the challenges that face organizations with regards to technology use such as data privacy and data theft, there are high hopes to the continued use of technology aspects such as telemedicine and Electronic Health Records (EHRs) in the pharmaceutical industry.

**Keywords:** Telepharmacy, Remote Patient Counseling, Electronic Health Records (EHRs), Data Privacy.

## I. INTRODUCTION

Telemedicine entails bridging the gap between patient and doctor via the use of modern-day technology by breaking the geographical barrier [5]. It facilitates providing clinical services to remote patients through both audio and visual means. It has proven to be a great addition to modern medicine and healthcare which has also seen significant growth in the pharmaceutical industry by facilitating various applications. Telemedicine is an asset to both the healthcare providers and the patients as it seeks to reduce costs and time. Advancements in technology have proven useful even to those with minimal technology knowledge as they can use it via simple instructions. Telemedicine offers services at the comfort and convenience of both parties which has transformed the healthcare industry. These applications enhance the delivery of pharmaceutical care, improve patient outcomes, and increase the efficiency of healthcare services. As technology and telemedicine continues to evolve, various applications in the pharmaceutical industry continue to evolve and its impact has been tremendous as discussed herein.

## II. TELEMEDICINE APPLICATIONS IN PHARMACEUTICAL INDUSTRY

There have been several applications where telemedicine has been applicable in the modern medicine and healthcare industry. For instance, telepharmacy services is one of the aspects that telemedicine has been useful in enhancing. Telepharmacy involves the provision of pharmaceutical care through telecommunications technology [14]. Pharmacists need to review the patients details and follow ups as pertaining to the patients' progress and reactions to drug usage [9]. Telepharmacy services ensure that a pharmacist can verify prescriptions and medication on the go before prescribing drugs. It also ensures that pharmacists can offer patient counseling remotely. This service is particularly useful in areas that are remote and access to a physical pharmacy is challenging. Video consultations ensure secure messaging as well as proper one on one communication between pharmacist and patient [2].

Another application that telemedicine has been instrumental in shaping is the Medication Therapy Management (MTM). This is a facility that allows for pharmacists to conduct comprehensive medication reviews remotely. For instance, this service helps professional doctors and pharmacists to assess medications appropriately as well as monitor a patient and offer advice on potential side effects of specific medications [10]. Telemedicine platform allows for continuous follow-ups which results in better health management especially for long distance clients. At the same time, it allows for proper care especially for the chronically ill patients such as diabetic and asthma patients. Patients remotely communicate with the doctors to monitor their health progress and adjust medications as needed [1]. Mobile applications as well as wearable gadgets can be used to track vital signs which are transmitted directly to the healthcare provider in real time. This therefore ensures that early detections of disorders are detected as well as having early interventions before worsening of a condition.

Another aspect of telemedicine is being useful in clinical trials and research. Clinical trials require a large set of data in order for the experiments to be wholesome and inclusive of a wide variety of demography [15]. This means that test subjects need to be collected from far and wide. Telemedicine ensures that conducting of clinical trials and pharmaceutical research is conclusive by enabling remote patient recruitment, monitoring, and data collection.

It breaks down geographical barriers to participation by ensuring that people can remotely enroll in studies and thus enabling collecting of diverse data through digital platforms [3]. This approach expands the reach of clinical trials, increases patient diversity, and accelerates the development of new medications and therapies [17].

Telemedicine has also come in handy when supporting pharmacovigilance by enabling remote reporting and monitoring of adverse drug reactions (ADRs). In conjunction with electronic health records, monitoring ADRs ensures that patients are provided with the right feedback especially on medications side effects and other assessments [8]. Telemedicine applications can be integrated with electronic health records (EHRs), ensuring seamless communication and data sharing between pharmacists and other healthcare providers [5]. Real-time monitoring ensures that drug safety surveillance is completed on time and also helps identify potential safety issues early [6]. Integrating the healthcare system with the HER ensures that there is enhanced care coordination, as pharmacists can access comprehensive patient health information, track medication histories, and collaborate with other providers to optimize treatment plans.

Lastly, telemedicine has enabled precise prescription Management and E-Prescribing especially for specialty drugs. Telemedicine has been instrumental in ensuring that electronic prescription bridges the gap between the customer and the physician [18]. E-prescribing allows healthcare providers to send prescriptions directly to pharmacies electronically, reducing the risk of errors associated with handwritten prescriptions [2]. This ensures that pharmacists verify medications electronically and disperse them within no time. Medical prescriptions renewals can also be done electronically and prescriptions sent to the patient without the need for in-person visits.

### **III. BENEFITS OF TELEMEDICINE ON PHARMACEUTICAL CARE**

There are several benefits that have accrued as a result of telemedicine incorporation in the pharmaceutical industry. One key benefit of telemedicine is that it has resulted in better healthcare management [4]. As earlier noted, telemedicine has been able to bridge the geographical gap between the patients and the pharmacists.

It has been particularly being useful for patients in isolated regions or rural areas where they need not travel for long distances to access specialized treatment [11]. It has also come in handy for those individuals with chronic ailments and cannot be able to travel far for routine checkups [7]. Therefore, telepharmacy has been able to facilitate remote consultations which ensures that pharmacists can review prescriptions and monitor their progress in real time. Telemedicine has added the aspects of video calls and secure messaging to ensure successful bridging of geographical barriers to healthcare access [14].

Another key benefit of telemedicine in pharmaceutical industry is that it has led to enhanced medication management. Pharmacists are able to give detailed medication instructions to patients without physically meeting with the patient [13]. On top of that, telemedicine has been able to facilitate remote monitoring of patients' medication use which enables prompt feedback from the pharmacists with regards to issues such as side effects. It has also resulted to faster identification of issues such as adverse reactions and faster resolutions [7].

Electronic health records (EHRs) has made it easy for patients to share their personal details with pharmacists and which is secured for any future use and consultations. It has also facilitated sharing of patient information between pharmacists and other healthcare providers, facilitating coordinated care and reducing the risk of medication errors [12]. This consultation with professional caregivers and physicians results to better health management and treatment outcomes [16].

### **IV. CONCLUSION**

Technology has been able to transform the pharmaceutical industry which has promoted better access to healthcare services as well as improving medication management.

Telemedicine has provided innovative avenues for consultations between healthcare providers and patients remotely. While challenges in using technology still exists, telemedicine has been able to lead to great evolution of the industry and still holds promise for further integrating telemedicine into pharmaceutical care.

Leveraging on the digital tools and platform would lead to a transformed pharmaceutical industry with easier access to medication and health services as well as improved patient education. This technology has been useful in enhancing service delivery in rural and remote regions where pharmaceutical services are nonexistent or scarce.

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