



IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH  
An official Publication of Human Journals

ISSN 2349-7203




Human Journals

Review Article


February 2020 Vol.:17, Issue:3

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## Telepharmacy: A Review



**IJPPR**  
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH  
An official Publication of Human Journals

ISSN 2349-7203

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**Submission:** 23 January 2020  
**Accepted:** 31 January 2020  
**Published:** 29 February 2020



HUMAN JOURNALS

[www.ijppr.humanjournals.com](http://www.ijppr.humanjournals.com)

**Keywords:** Tele-Pharmacy, Tele-Health, Tele-Medicine, Teleconferencing or videoconferencing

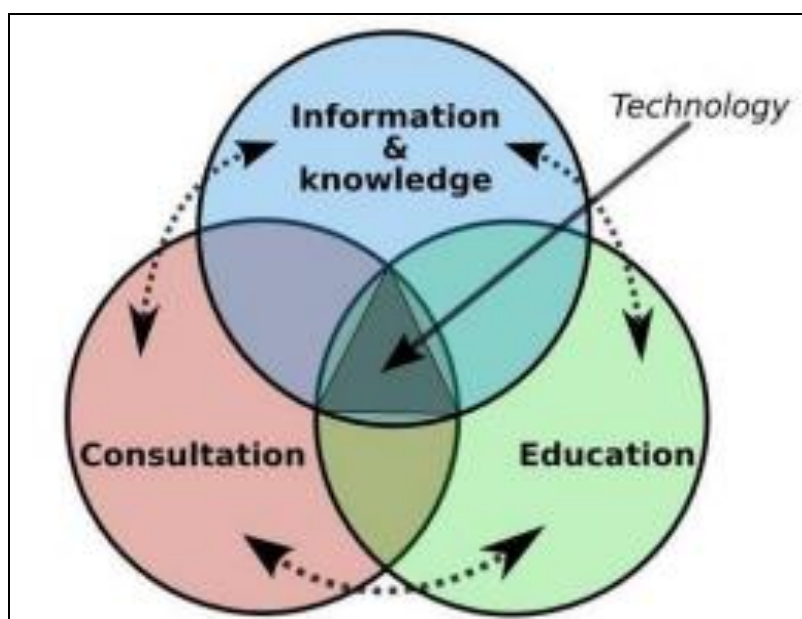
### ABSTRACT

Telehealth is the use of electronic information and telecommunication technologies to provide long-distance health care and education to patients. These services include clinical applications such as drug therapy monitoring, patient counseling, prior authorization and refill authorization for prescription drugs, and monitoring of formulary compliance, remote monitoring, with the aid of teleconferencing or videoconferencing, and access to specialist services such as consultation and medical imaging, as well as nonclinical services such as provider training, administrative meetings, and continuing education of health professionals using information and communication technologies (ICTs). Conversation among medical staff and doctors with expert opinion for the patient has bartered the face of the remedy - videoconferencing, Tele-radiology, Tele-nursing, Tele-pathology, Tele-radiology, and Tele-pharmacy, etc. are few examples of such projects. Agrarian societies across the nation are struggling with declining and aging populations, shortages of health professionals, declining access to health care and loss of local businesses. The access to this service in rural and/or remote areas will overcome the shortage of healthcare providers. The impact of Tele-healthcare on both patients and their families, as well as on healthcare providers and the health-care system, must also be meaningfully appreciated and characterized. Compliance of this technique by users, financial unavailability, Literacy rate, and language barriers, Technical pressure, Quality aspect, Regulatory bodies are a few challenges for the implementation of such projects in India. This technique lowers the incidence of health affected cases. This technique may be the best way to provide cognitive behavioral therapy in depressive patients as it is difficult to visit healthcare centers with such populations. This technique brought significant changes in the health of patients in the unavailability of healthcare professionals in remote areas.

## INTRODUCTION

Industries of all dimensions are ante up the internet for e-trade and e-market. Eventual remunerations resulting from e-market upsurge when industries involve in the evolution of the economic revolution. Pharmacies are no exclusion to this revolution. Though employed on the scheme for the growth of an online pharmacy, joining a lead structure aimed at the prescription of medicines for minor diseases. It was fascinating to communicate that, the word Pharmacy was frequently animated up with alternative word Tele-pharmacy. This uncertainty drastically emulates an absence of conspicuousness on e-Pharmacy and Tele-pharmacy. <sup>(1)</sup>

Telehealth is the use of electronic information and telecommunication technologies to provide long-distance health care and education to patients. And these strategies are used to provide patient care services and optimize subsequent outcomes from a distance. <sup>(2)</sup>



**Figure No. 1: Link between Tele-pharmacy and Tele-health <sup>(3)</sup>**

These services include clinical applications such as drug therapy monitoring, patient counseling, prior authorization and refill authorization for prescription drugs, and monitoring of formulary compliance, remote monitoring, with the aid of teleconferencing or videoconferencing, and access to specialist services such as consultation and medical imaging, as well as nonclinical services such as provider training, administrative meetings,

and continuing education of health professionals using information and communication technologies (ICTs).<sup>(4,5)</sup>

Clinical pharmacists can engage in and provide comprehensive medication management (CMM), as outlined by the American College of Clinical Pharmacy Standards of Practice for Clinical Pharmacists. Definition and the associated eligibility for practice do not change because care is delivered through Telehealth services. Most clinical pharmacists achieve CMM competence by acquiring additional knowledge, skills, and experience during postgraduate clinical training, but capability can also be obtained and enhanced through clinical practice.<sup>(2)</sup>

Remote dispensing of medications by automated packaging and labeling systems can also be thought of as an instance of Tele-pharmacy. Tele-pharmacy services can be delivered at retail pharmacy sites or through hospitals, nursing homes, or other medical care facilities.<sup>(5)</sup>

This technique is the delivery of pharmaceutical care via telecommunications to the patient in locations where they may not have direct contact with healthcare workers like pharmacists to perform clinical evaluations. This technique is growing in popularity as healthcare becomes more patient-oriented and driven by the outcome and quality measures.<sup>(6)</sup>

The involvement of pharmacists in the remote review of medication orders when the hospital pharmacy was closed may result in a decreased number of adverse drug events reported.<sup>(7)</sup>

With the expansion into providing care for chronic conditions while attempting to also decrease health care costs, it is natural to anticipate that various health care professions, including pharmacy, will become involved in the Tele-health process in the pursuit of improved patient care.<sup>(8)</sup>

There are numerous advantages that e-pharmacy ventures to bid to its users: low-cost medicines, rapid dissemination, and decent therapeutic care. Western nations have well-considered rules on examining cases of betrayal over e-pharmacy. For instance, the sale of prescription medicines over e-pharmacy is not allowed to strip off the prescription being directed to the pharmacist. E-pharmacy is usually recommended for over-the-counter medicines given that respite for minor illnesses in these nations.<sup>(1)</sup>

It has become easy to send any kind of medical information anywhere across the globe for seeking medical help. Conversation among medical staff and doctors with expert opinion for the patient has bartered the face of the remedy - videoconferencing, Tele-radiology, Tele-nursing, Tele-pathology, Tele-radiology, and Tele-pharmacy, etc. are few examples of those.<sup>(9)</sup>

With age effect elderly patients missing their appointments because they feel the hassle to go out of their homes. And this remote technology has allowed healthcare professionals to review patient's medications without them having to suffer. This has increased patient trust and satisfaction with the service.<sup>(7)</sup>

Drawbacks of Tele-pharmacy include reluctance or inability to use the technology, particularly for older persons. The pharmacist's ability to fully assess a patient's condition is limited to some extent when face-to-face interaction is not present.<sup>(4)</sup>

Agrarian societies across the nation are struggling with declining and aging populations, shortages of health professionals, declining access to health care and loss of local businesses.<sup>(5)</sup>

Cost of Tele-communication, data management equipment and technical training for medical personnel who will employ it are also some deficiencies of Tele-medicine. Fundamental medical management also entails potentially decreased human interaction between medical professionals and patients. It may increase the risk of error when medical services are provided in the absence of a health care provider.<sup>(9)</sup>

Even with these limitations, however, Telehealth technologies provide an opportunity to increase patients' access to health care and improve clinical outcomes.<sup>(2)</sup>

### **Purpose of Tele-pharmacy**

For rural and remote communities, as a technology Tele-pharmacy holds significant promise to improve access to pharmaceutical care.<sup>(5)</sup>

Clinical pharmacists are healthcare professionals trained to ensure medication-related assistance to hospital personnel and patients. The access to this service in rural and/or remote areas will overcome the shortage of healthcare providers.<sup>(10)</sup>

Tele-pharmacy provides various roles for the pharmacist, like dispensing, administrative and clinical pharmacy services. Being a dispensing pharmacist filling of prescription and counseling the patients will be possible in video conferences. Practicing in a remote area, the clinical pharmacist can work along with physicians by maintaining electronic health records. Patient safety improves services backstop physicians in rural hospitals when their pharmacists are not on their premises. By using automation and information technology to widen the coverage of pharmacy services to underserved areas, Tele-pharmacy manages to bridge the gaps in pharmaceutical care to rural communities. <sup>(1)</sup>

It also helps in providing expert opinion to the remote areas that are deprived of advanced medical facilities. <sup>(9)</sup>

### Proposed framework and Mechanism of Tele-pharmacy <sup>(9)</sup>

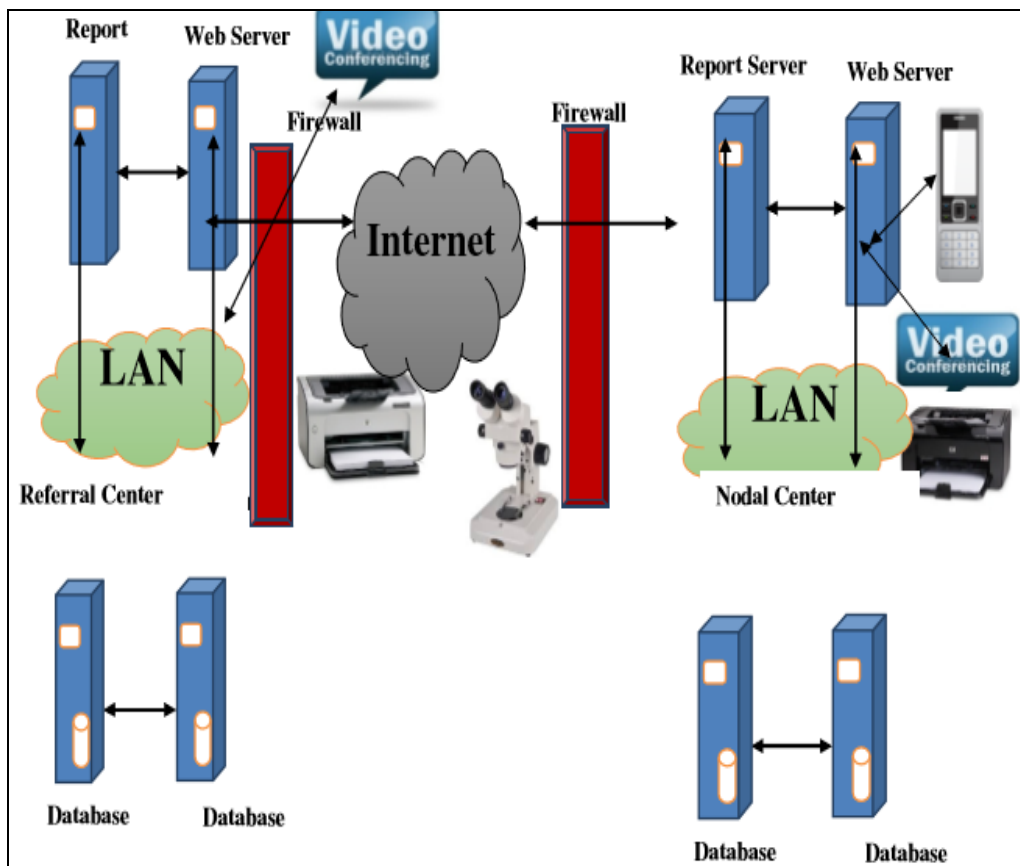


Figure No. 2: Framework

Following flowcharts will explain the mechanism of Tele-pharmacy:

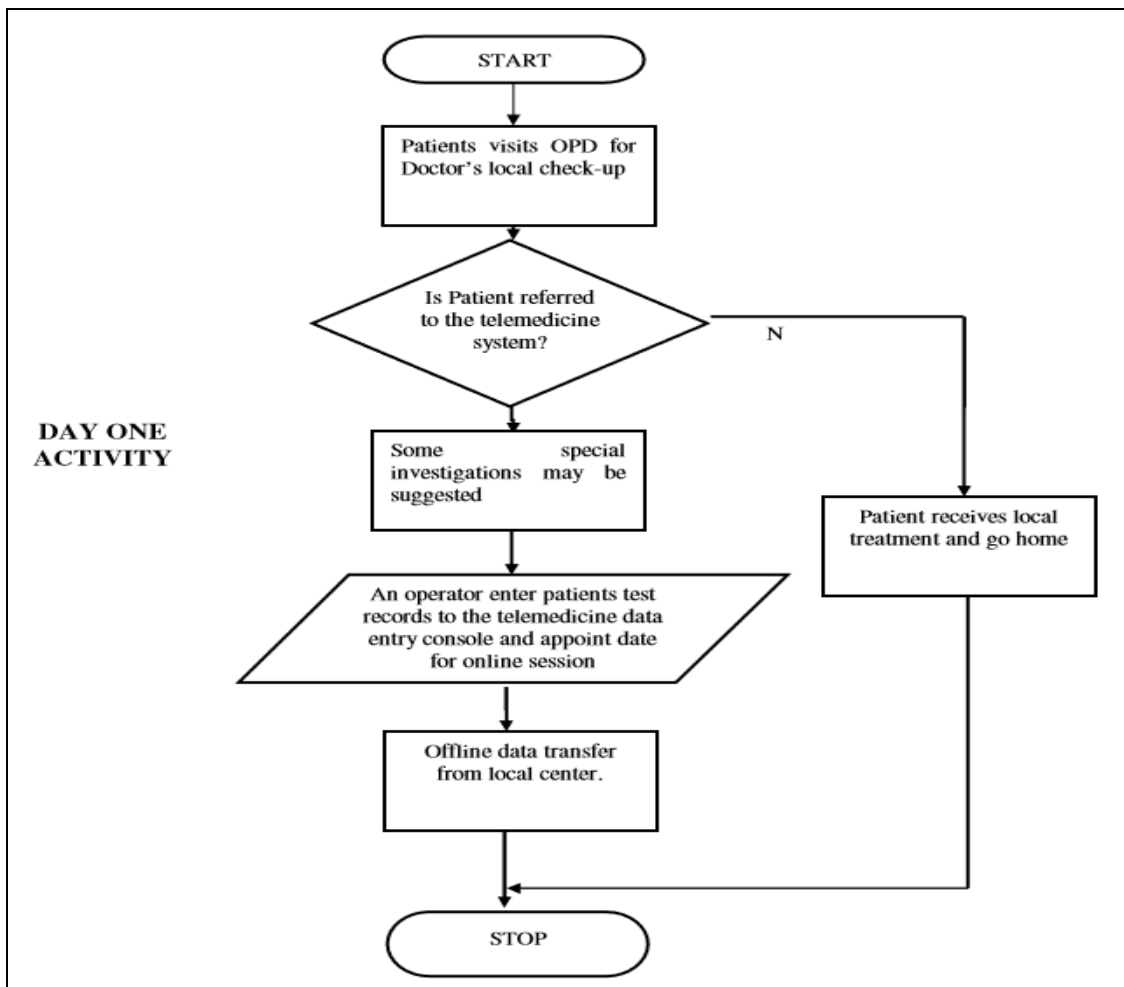


Figure No. 3: Day one activity

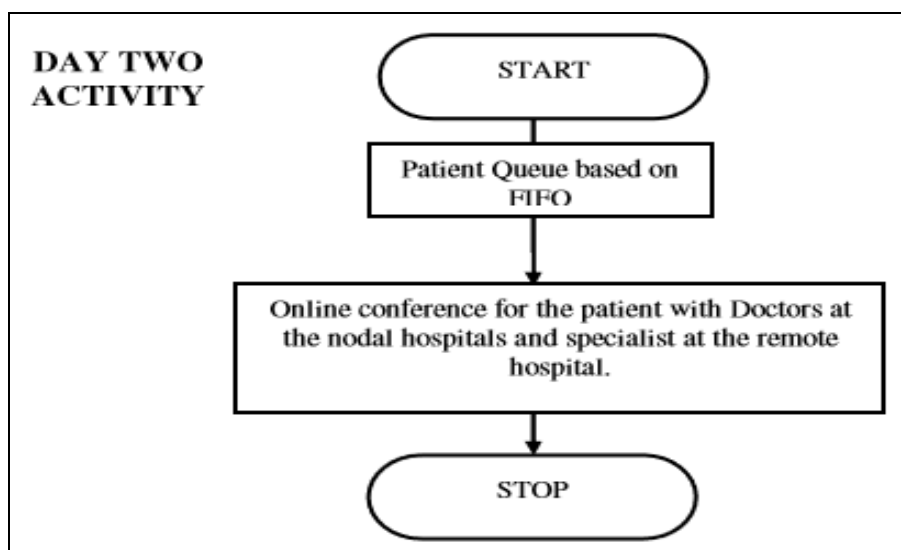


Figure No. 4: Day two activity

### **Clinical impact of Tele-pharmacy**

The impact of Tele-healthcare on both patients and their families, as well as on healthcare providers and the health-care system, must also be meaningfully appreciated and characterized. <sup>(4)</sup>

Telephone counseling will determine the effectiveness to improve adherence in patients initiating a new therapy. <sup>(11)</sup>

Tele-pharmacy ensures greater satisfaction of patients about pharmacist counseling and time required obtaining medication. <sup>(7)</sup>

### **Challenges for Implementation of Tele-pharmacy in India <sup>(3)</sup>**

**Compliance of this technique by users:** lack of emotional relationship among the patients towards physicians. And on another hand, it is a matter of difficulty for untrained healthcare workers to convince in managing the cases through Tele-pharmacy due to their poor knowledge of gadgets.

**Financial unavailability:** High cost of technology and its supportive gadgets makes financially unfeasible for various organizations and hospitals for the implementation of Tele-pharmacy projects.

**Literacy rate and language barriers:** Poor is literacy rate and very wide diversity in languages spoken by different populations interfere with the implementation of advanced technological skills.

**Technical pressure:** Tele-pharmacy supported by various old version software and hardware, still needs to upgrade with the latest designing and advances in biological sensors and better connectivity solutions.

**Quality aspect:** Registration of telemedicine by this way after the perusing of standard procedure so that minimum safety standards are uniformly adopted. Drafting and passing a Telehealth act for India is required which ensures quality health care and supports the post-marketing surveillance program.

**Regulatory bodies:** Telemedicine is at the primary stage and the government has resources and power to support it for better health care delivery.



## Reported outcomes

It is reported that by following this noble technique patient compliance has been increased in rural due to the unavailability of healthcare workers/ pharmacists, the health of the patient was affected. This technique lowers the incidence of health affected cases. This technique may be the best way to provide cognitive behavioral therapy in depressive patients as it is difficult to visit healthcare centers with such populations.

## CONCLUSION

This technique brought significant changes in the health of patients in the unavailability of healthcare professionals in remote areas. Perhaps the slogan “Health for all by 2000” which was forgotten towards the end of last century, can still be achieved by the year 2022 by making the Tele-pharmacy revolution happen in India.

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