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A Critical Analysis of Online Pharmacy Services

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ABSTRACT:The field of telepharmacy has developed dramatically in recent years. Patients in rural and isolated areas can face delays in receiving treatment due to a lack of pharmacies and other healthcare professionals. It is now feasible to provide healthcare services to patients in rural and distant areas because of technology advancements and the growth of communications networks. This analysis aims to dissect the available data on telepharmacy and its operation. This page covers every facet of telepharmacy, from its history and development to its therapeutic advantages and disadvantages. Due to its importance in expanding access to healthcare services for those living in remote areas, telepharmacy is increasingly being studied.

Keywords:Telepharmacy, pharmacist, rural area, telecommunication, healthcare services.

I. INTRODUCTION:

In this article, we define telepharmacy as "the provision of pharmaceutical care to the patients by pharmacist via telecommunication in settings where the pharmacist does not have direct contact with the patients."(1) The pharmacist providing telepharmacy services need not be present either at the patient's home or at the pharmacy. Remote patients may get the drugs and clinical care they need from a pharmacy thanks to telepharmacy services.(2)

Telepharmacy plays an essential role in lowering the likelihood of adverse drug reactions, lowering the cost of medications, and lowering the chance of treatment failure.(3)

The delivery of pharmacological treatment by telephone was the impetus for the birth of telepharmacy, which had its beginnings in hospitals.

In 2001, North Dakota became the first state in the United States to formally assess the usage of telepharmacy.

North Dakota State University is doing a research with 81 pharmacies. The United States (US), Canada, Italy, Germany, Scotland, France, Denmark, Spain, and Egypt all provide

telepharmacy services to their respective citizens. The United States and Australia have the most practice dealing with health care shortages.(4) Pharmacies play a crucial role in the health care system and provide a wide range of medical services. Both patient counseling and pharmacovigilance services rely heavily on the expertise of pharmacists.(5) There is a current shortage of medical practitioners.(6) The use of ICTs in the healthcare industry as a means of addressing the scarcity of medical personnel. Telepharmacy is an important tool for combating this problem.(6) Many people living in outlying areas have trouble gaining access to pharmacy care. Telepharmacy services are most useful in settings such as small pharmacies in rural regions, long-term care facilities, hospitals, medical offices, correctional facilities, military posts, ships, etc. Telepharmacy advocates say it is the best option for reaching people in rural and other medically underserved parts of the nation.

With the advent of telepharmacy, there is a fresh chance for pharmacists to flourish and join forces with technology for the benefit of patients. It gives pharmacists permission to serve a wider range of patients than ever before.(7)

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Types of Telepharmacy:

1. Inpatient/Remote Order-Entry Review:

A hospital's inpatient pharmacy may take advantage of telepharmacy by having a pharmacist enter orders from a distant location.

Before the hospital personnel administers a patient's medicine, a pharmacist at a distant site examines the order. Hospitals, clinics, and healthcare systems may all benefit from inpatient telepharmacy.

Systems as it allows medication order review and tracking in real-time. The in-hospital telepharmacy setting allows for round-the-clock pharmacy care.

When it comes to medication treatment, pharmacists have the most in-depth expertise of any

telepharmacy outlets in underserved regions because to advances in remote dispensing. Financial efficiency and patient adherence may both benefit from this.

Third, intravenous (IV) admixture is defined by the JCAHO as "the preparation of pharmaceutical product which needs the measured addition of a drug to a 50ml or larger bag or bottle of intravenous fluid."

There may be time and cost savings for hospital pharmacists with the use of telepharmacy in the iv admixture process. Reviewing the iv admixture remotely saves the time normally spent donning protective gear and entering the cleanroom.

By freeing up the pharmacist's schedule, they'll have more time to devote to patient care and revenue-generating initiatives.

Fourthly, a pharmacist may provide counseling services remotely by means of telecommunications or live and interactive video chats.

Counseling services, such as those for specialties and discharge, may be expanded via the use of remote patients.[8]

Telepharmacy systems and services rely on 1) a central pharmacy being staffed with licensed pharmacists and 2) a staff of trained pharmacy technicians.

There must always be a pharmacy technician present while a telepharmacy service is being provided. The inpatient and outpatient care systems would not function without technicians. The technician must be qualified for the task at hand and have experience carrying it out.

The pharmacist has to be in touch with the center for system administration, thus it's important for them to keep up with the latest communication

member of the healthcare team.

Retail community telepharmacy is another name for remote dispensing (also used for outpatient and discharge care). A qualified pharmacy technician works at this drugstore, making it official. From afar, a pharmacist provides advice and oversight to the technician, reviews the prescription, and carries out other duties through video chat or telephone. Due to their remote locations, many rural patients have trouble obtaining necessary pharmacy care. Telepharmacy allows for easier access to care for these individuals because of the ease of remote dispensing.

Healthcare providers are able to open retail

equipment. A central pharmacy's primary responsibility is to act as a point of contact for all medication dispensing at satellite pharmacies.

Telepharmacy cannot be achieved without the proper communications infrastructure.

The primary component of this set-up is a personal computer (PC) loaded with specialist software.

2. Videography tools

The third category includes various types of transmission systems (such as DSL, modem, leased E1 lines, online connections, and mobile phone networks).

Fourth, a backup set of telepharmacy tools.[3] Drug evaluation and monitoring, compounding verification, dispensing, medication therapy administration, counseling, patient assessment, drug information, and clinical consultation are all examples of services provided by telepharmacy.

How Telepharmacy Works: Typically, a smaller hospital, clinic, or pharmacy is connected to an ordinary service model in a bigger metropolitan center, where pharmacist personnel is more readily available. An automated dispensing machine serves as the connecting mechanism. Depending on the location, nurses or pharmacy technicians are often provided at the rural site in statement [9]. Patients may send their prescriptions in through some central location (a fax machine, for example) where they will be processed by a licensed pharmacist. Using a telepharmacy paradigm, all inpatient drug requests are reviewed by the hospital's pharmacist. An encrypted Virtual Private Network (VPN) connection is used whenever a doctor writes a prescription so that the order may be analyzed and cross-referenced with the patient's electronic medical record. The pharmacist will make every effort to subtly

the orders, such as clarifying unclear or prohibited orders, recommending ways to better adhere to the hospital's formulary, checking for drug interactions, warning nurses about potentially dangerous medications, suggesting automatic therapeutic interchanges, and checking for the use of restricted abbreviations. Medication labels are produced automatically at the hospital pharmacy when the pharmacist enters each order into the computer system. After confirming what needs to be sent to the remote location, the central pharmacy sends the goods along with a label. In distant or rural areas, a pharmacy technician or nurse scans the prescription's barcode to verify that it corresponds to the label, then gives the patient their medication. The technician may fill and distribute prescriptions under the watchful eye of the central pharmacist to ensure accuracy.

The next step is a two-way video chat between the central pharmacist and the patient to ensure that the latter fully grasps the planned pharmaceutical usage and delivery.[10]

The pharmacy profession, clinics, hospitals, and patients may all benefit greatly from telepharmacy, but the practice is not without its drawbacks and problems. Here are a few examples of them:

Advantages:

1. Access to healthcare system :

With the help of telepharmacy, people living in far-flung locations have access to medical treatment. Getting pharmaceutical treatment to places with little or no access to medical facilities is a good idea [11].

Two advantages of telepharmacy include higher patient satisfaction and cost effectiveness. Many elderly patients do not show up for their scheduled visits because they are unwilling to leave the comfort of their homes. Through telepharmacy, pharmacists may check on a patient's meds without physically being with them. Patients are more likely to be pleased by the services provided by telepharmacy as a result of this.[12]

Third, there is just a little lack of pharmacists, which is causing problems for many outlying clinics, medical centers, and hospitals. Medication is distributed without the presence of a pharmacist in various settings. Rural communities may have to rely on nurses, physicians, or other healthcare practitioners to offer pharmacy services in the absence of a pharmacist. It's possible that they lack the necessary skills for providing such aid. This results in imperfect structures that fall short of achieving government goals for pharmaceutical service quality. The use of telepharmacy might help address these issues. Access to pharmaceutical services is enhanced, and the shortage of pharmacists in rural regions is mitigated, thanks to telepharmacy.[10]

Effective patient counseling is another benefit of telepharmacy. When it comes to medicine and counseling, telepharmacy guarantees patient satisfaction.[14]

The economic advantages of telepharmacy are many. The costs associated with opening a new pharmacy are higher than those associated with telepharmacy, which merely need the purchase of equipment and the hiring of a pharmacy technician. One competent pharmacist may manage many locations. As a result, less money is spent on paying for and recruiting new pharmacists.[14] Telepharmacy removes the barriers of distance and time for the elderly and the handicapped in remote areas. Since there is no longer any need to visit other locations, time and money spent on travel are saved.[15]

Cons: 1. Impractical Obstacles:

While the idea of telepharmacy is brilliant, putting it into reality may be difficult in certain settings. The implementation of telepharmacy in rural hospitals and clinics faces significant operational and resource hurdles. High-speed digital connections and complicated, expensive equipment are generally in short supply in rural locations, making it difficult to provide telepharmacy services there. Seventeen) One of the biggest challenges to integrating telepharmacy into the current healthcare system is the culture of the institutions themselves. Significant changes from the status quo are necessary for telepharmacy to

hospital operations in far-flung areas. It might be challenging for them to adjust to these new circumstances.[16]

The benefits of telepharmacy to both patients and doctors might be substantial and less urgent.[17]

Second, the regulations and procedures that govern the operation of pharmacies do not adequately handle the expanding sector of telepharmacy, despite its potentially global impact. There are many policy issues that must be taken into account, including the minimum amount of time that a pharmacist must be present at the central site, the location of the central pharmacist, the type of equipment and technology used, and the responsibilities of the pharmacist, nurses, pharmacy technicians, and other healthcare providers in the distribution of medications. The rules are crucial for the functioning of the whole drug usage system, since they detail the function of telepharmacy in pharmacy services and critical care units.

The widespread implementation of telepharmacy has been hampered by the fact that telehealth licensure is still a multi-layered process with state-by-state discrepancies.[18]

Thirdly, privacy: In telepharmacy, patients' private

health data is sent digitally. Information security is crucial in order to make this massive data flow manageable.[19]

It takes a lot of time, money, and effort to get started with telepharmacy. Connectivity, hardware, software, operating expense, and specialized gear are also required.

One of the main obstacles to telepharmacy services is the expense, especially for rural hospitals with a smaller patient population.[20]

5. Inability to Use Technology: Adoption of modern technology may be beyond the capabilities of the elderly. Since there is no in-person communication between the patient and pharmacist, the pharmacist may be unable to provide adequate care.[10]

Asthma Treatment Outcomes from a Telepharmacy Perspective

Asthma patients' clinical outcomes have been studied and telepharmacy has been used to improve them.

Cochrane Airways has reviewed 21 clinical studies using telehealth and asthma, led by Mc Lean, Chandler D, and others.

Bynum and coworkers collaborated with 49 adolescents who had been diagnosed with asthma and were taking Multi-Dose Inhaler (MDI) drugs to study the efficacy of telepharmacy.

The research found that compared to the control group, more patients in the telepharmacy guidance group successfully used the MDI approach. Satisfaction with the educational sessions did not

significantly differ between the telepharmacy counselling group and the control group.

Patients with diabetes mellitus have found success in using telepharmacy to enhance their clinical outcomes. In a Veterans Affairs (VA) initiative, a pharmacist's Tele-MTM service has led to significant improvements in secondary care. Diabetes mellitus, hemoglobin A1c, low-density lipoprotein, systolic blood pressure, etc., are all examples of hereditary disease outcome markers.[21]

II. CONCLUSION:

Patients who lack easy access to healthcare services may benefit greatly from telepharmacy's role in getting them the medicine they need. It is now feasible to provide healthcare services to patients in rural and distant areas because of technology advancements and the growth of communications networks. Medication treatment management, compounding verification, drug information, dispensing, patient evaluation, and counseling are all components of telepharmacy services. This page covers every facet of telepharmacy, from its history and development to its therapeutic advantages and disadvantages. The use of telepharmacy has various benefits, including cost savings, simplified access to healthcare services, more efficient patient counseling, and higher levels of patient satisfaction. Research into telepharmacy has grown since it has become more important in expanding access to healthcare services in remote areas.

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