



# Telerehabilitation & the Injured Worker

» A PRACTICAL GUIDE

## » Introduction

Imagine a worker has suffered a recent musculoskeletal injury and has been prescribed physical therapy three times per week for four to six weeks. That's a lot of travel for the patient. And a substantial burden for employers responsible for paying transportation costs, especially if the injured worker is unable to drive. What if instead of driving to the medical center, all the patient had to do was reach for a smartphone to videoconference with the physical therapist?

Thanks to advances in technology—as well as growing needs prompted by the Affordable Care Act and an aging population—telerehabilitation is becoming a viable option with the potential to transform the workers' compensation industry. Advanced telemedicine capabilities can now provide injured workers with a much-needed alternative to on-site medical care.

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**Now, telerehabilitation is becoming a viable option to bolster hands-on therapy with virtual care options.**

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Of course, not all patient-provider interactions are currently translatable to telerehab. For instance, manual manipulations are undeniably in-person treatment methods. However, online exercise demos, virtual workout supervision, and secure communication tools make it possible to supplement in-clinic physical therapy with valuable remote services including patient follow-ups, home treatment plans, questions and answers, and consultations with specialists.

The result: greater patient compliance, smoother care coordination among clinicians, a more flexible rehabilitation timeline, and cost and time savings for key stakeholders.

Read on to learn more about the burgeoning field of telerehabilitation and its place in the world of workers' comp.



## » Supply and Demand and the Birth of Telerehabilitation

A patient population and an industry at the tipping point.

Telehealth and telemedicine have been much-discussed concepts for the last 20 years; however, only recently, as the demand for healthcare services has increased, has it made strides toward becoming not only an acceptable but desirable tool in the physical medicine toolbox. In a society where virtually any task can be initiated via smartphone, it should be no surprise that patients are eager to do just that when it comes to a doctor's visit.

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**In a 2015 Software Advice report, 74% of respondents said that they were interested in trying it in lieu of an in-person visit.**

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In a **2015 Software Advice report**<sup>1</sup>, 74% of respondents said that although they had never utilized telemedicine services, they were interested in trying it in lieu of an in-person visit. Thirty-nine percent of respondents described themselves as “extremely interested” or “very interested” in using telemedicine services, and 71% of all respondents said they would “strongly prefer” or “somewhat prefer” online care for minor medical ailments. Only 6% said they saw no benefits to telemedicine.

Telehealth is projected to see serious growth in coming years. According to the **Global Telemedicine Market Outlook 2020**<sup>2</sup>, the market for the supporting technologies, including hardware, software and services, stood at \$17.8 billion in 2014, and is anticipated to grow at a compound annual growth rate (CAGR) of over 18% from 2014 to 2020.

### **Workers' Comp: Turning from Telehealth to Telerehabilitation**

There is a growing body of research supporting **the positive impact telemedicine can bring to patient care**<sup>3</sup>. As a result, the concept has picked up steam, with **a growing number of patients**<sup>4</sup> interested in trying a remote care option in lieu of an in-person visit. However, telehealth and telemedicine are only just now generating interest in the workers' compensation arena.

Workers' compensation professionals generally define telehealth broadly as a virtual interaction involving multiple parties in the claims process. Some consider telephone communications between injured workers and nurse case managers to be an example of early telehealth at work. And, in one description by the FDA, telemedicine was called “an extension of one of the oldest, simplest, and most popular forms of electronic medical consultation: a telephone conversation between doctor and patient or a medical generalist and a specialist.”

Both of these descriptions, however, are oversimplifications of the sophisticated infrastructure powering telemedicine.

Telemedicine as we know it today—in which doctors and patients can securely videoconference via a smartphone—would not be possible without **modern IT resources**<sup>5</sup> that allow for transmission of data between sites, including health informatics, medical data and imaging files. Thanks to this centralization and accessibility of data, today's physical therapists can now offer initial diagnoses, monitor and assess progress, and securely communicate more readily with patients as questions arise.

As such, the definition of telehealth in the workers' comp industry is also expanding to now encompass much more specific clinical telerehabilitation services, such as virtual face-to-face interactions and the remote measurement of vital signs.

## » Why Telerehabilitation for Workers' Comp?

Early successes show the benefits and opportunities telerehab presents to injured workers along the road to recovery.

Telerehabilitation seems appealing even to those who have not yet experienced it. Why is that? The obvious benefits for injury triage, case management and follow-up are clear—but the value of virtually delivering a traditionally hands-on service like physical therapy has not yet been recognized fully. Here are just a few of the benefits patients and payers stand to gain in using telerehabilitation services:

- 1. Increased Access to Care.** There is a shortage of physical therapists nationwide, in general, and bilingual PTs are even scarcer. Telerehab makes access to specialized PTs easy and cost effective.
- 2. Reduced Costs.** Nearly a quarter of respondents (21%) of the Software Advice survey cited not having to travel as the biggest benefit of telemedicine—and for good reason. Traveling to a doctor's office, especially in a rural area, can be a considerable expense to employers, insurers or TPAs as they are left holding the bill for getting injured workers to and from appointments, not to mention lost time from work if they're traveling to appointments during business hours. Consider how much more costly it is for physical rehabilitation treatment. Physical therapy is prescribed, on average, two to three times per week for several weeks. Allowing patients to use phone, web chat or video to connect with PT services means lower transportation costs.
- 3. Improved Compliance.** Attending visits two to three times per week for a period of several weeks is not only costly; it can be inconvenient and tiresome for the patient. Connecting virtually via telerehabilitation is easier and less disruptive which can improve patient compliance significantly. The injured worker gets the care they need, when they need it, minus the fuss.

- 4. Simplified Communications.** It was not long ago that the only way to communicate outside of an office visit was via snail mail. Today, medical documents can be sent and received securely over the internet, allowing both patients and therapists to easily connect with specialists for second opinions or to coordinate care.

### Practical Benefits

Several studies estimate that anywhere from 25% to 75% of clinical encounters do not require an on-site clinical visit<sup>6</sup>. As such, there are several situations when an injured worker's access to care would be greatly enhanced by telemedicine.

If, for example, a manufacturing employee injured himself or herself while working an overnight shift, the only other option may be to visit an emergency department for evaluation. Or, if a truck driver sustains an injury while on the road, the closest clinic may be at a remote location. Under these circumstances, telemedicine is a viable resource for immediate assessment.

In addition to the physician's initial injury evaluations, follow-up visits are generally conducted every 45 days and, in some cases, are largely hands-off, simply offering a time for the worker and their provider to discuss how treatment is progressing. Again, consider the even greater benefits for physical therapy with appointments that occur 2-3 times a week for 3-4 weeks and sometimes longer. Virtual visits can be held on site at the employer location and even if the employee is traveling. The value and the convenience for traveling sales reps, cruise ship staff and employees in the transportation and distribution industries is enormous.

Finally, remote patient monitoring technologies allow healthcare providers to monitor complex, high-risk conditions and remain attuned to a patient's progress and recovery to help prevent re-injury, complication, or delays in treatment.

### Clinical Outcomes

According to a **Bini & Mahajan study**<sup>7</sup>, clinical outcomes associated with telerehabilitation sessions may be equal to that of traditional in-person care services. The study set out to compare the clinical outcomes of total knee replacement patients who underwent traditional in-person outpatient physical therapy to those who participated in physical therapy delivered through an asynchronous video-based tool. The 23 narrated videos created for the study demonstrated the same exercises taught in clinics, were each under 3 minutes in duration, and featured on-screen text-based instructions.

On average, study patients engaged with the video-based model reported exercising for a mean of 47 minutes a day. They also logged in 49 times during the study period, posted 9 videos and 5 photographs, and sent 10 messages to their physical therapy providers. And, while patients utilizing the traditional care model logged 11 more minutes of exercise a day, they also reported a mean travel time to appointments of 75 minutes.

Patient satisfaction levels were high among both patient groups, with participants reporting that it was "easy or very easy" to communicate with their physical therapist. On top of this, the study authors write that, "clinical outcomes following asynchronous telerehabilitation administered over the web and through a hand-held device were not inferior to those achieved with traditional care,"

suggesting that telehealth sessions of this nature are clinically equivalent to the in-person care model.

Considering these positive effects, telerehabilitation models have the potential to save both time and money for patients and employers alike. It's true that not every injured worker may be an ideal candidate for telemedicine—and in some circumstances, there is simply no replacement for

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hands-on care—but any resource that can alleviate obstacles for even a subset of injured workers while upholding exceptional clinical standards is a critical component of any robust managed care program.

## » Who Is the Ideal Telerehab Patient?

Prerequisites for workers' comp telerehab success.

There's no doubt telemedicine is a key element of next generation health services, but not every injured worker can be appropriately treated through virtual services. Even if an injury is found to be appropriate for telerehabilitation, the patient must also have the technology required to remotely connect with their provider. For this reason, a managed care organization needs to offer a data-driven screening program to identify ideal telerehab candidates and take into account the following:

**Injury/Treatment Plan:** Is telerehab clinically appropriate—and if so, when? The severity, nature of the injury and any complicating factors will be the first consideration of any screening program. Some treatment plans will not translate well to telepractice, such as monitoring a patient with unusual or heavy work demands; s/he may need specialized equipment or in-person supervision. In other instances, in-clinic PT sessions can be supplemented with valuable remote offerings including online education, virtual home exercise supervision and online discharge planning appointments, to create a hybrid treatment plan.

**Technology Access:** At a minimum, telerehab patients will need a computer, smartphone or other device that is compatible with the HIPAA secure telehealth software. The device must be connected to the internet, either through a dependable wireless or wired connection, or a mobile network. Most telerehab treatment plans necessitate the use of a microphone and camera, which are built-in to most computers and mobile devices but can be purchased as external hardware if needed. Speeds of 15Mbps download and 5Mbps upload are best to ensure a smooth video streaming experience.

### Reasons Patients Say ‘Yes’ to Telerehabilitation

Although many patients may meet the requirements outlined above, only a subset will be interested in using telerehabilitation services. There are many reasons that patients might feel motivated to engage with their provider in a virtual fashion. Here are some of the more common drivers of enthusiastic telerehab adopters:

**Location:** Healthcare services in rural areas have taken a hit in recent years. According to the **National Rural Health Association**<sup>8</sup>, 75 rural hospitals have closed and 673 more are in danger of closing. The shortage of clinicians working in remote areas and absence of specialty services like physical therapy often means increased travel times for rural patients. Telerehab services offer these patients a fast and convenient option to get the care they need. In a **2012 report by the Institute of Medicine for the National Academies**<sup>9</sup>, it was found that telehealth increases quality of care and reduces costs in rural communities.

**Demographic:** While interest in technology cannot be dictated strictly by age, conventional wisdom would tell us that telerehab may find more traction among younger patients. After all, research has shown that millennials are **5 times**<sup>10</sup> more likely to adopt technology than any other age group. And in a recent survey, **71% of millennial patients**<sup>11</sup> indicated they would like to engage with their provider via a mobile app. While younger patients may be more eager to adopt telerehab, older patients should not be excluded from such services. **High patient satisfaction among older adults**<sup>12</sup> has been reported for telerehab services in the group health arena for home health applications after stroke, fall, etc.

**Lifestyle:** For some patients, the appeal of telehealth really boils down to convenience. In workers’ comp, convenience may have added weight for frequent business travelers who find it difficult to establish a consistent schedule at a physical “home base” provider or others who have family obligations that make it more difficult to travel to appointments. A **survey conducted by the American Telemedicine Association**<sup>13</sup> found convenience to be the top motivator for active healthcare users interested in complementing or replacing their in-person care with telehealth services.

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## » Telerehab Technology

Discover the primary approaches driving today's telerehabilitation services and how they can serve the workers' compensation market.

Below we explore three models of telemedicine technology, how they're being used in PT and the benefits of each. Although different in their approaches, all three models of telemedicine can deliver significant value for the physical rehabilitation of injured workers and, when there is flexibility to combine models based on patient need, the value is even greater.

### **Live Video (Synchronous)**

Often referred to as "real-time," synchronous telehealth tools facilitate live, two-way interactions between patients, caregivers and providers using audiovisual technologies. This type of telemedical care is often employed as an alternative to an on-site clinical visit for the purposes of consultation and diagnosis.

In addition to reducing transportation costs and bolstering access to care in remote areas or during off hours, these convenient virtual visits have been shown to improve patient satisfaction and potentially improve care outcomes.

This type of technology may be used in physical therapy to perform an at-work environmental assessment, conduct a goal-setting session or dispense patient education. It may also be possible to administer functional training, movement facilitation guided assessments or therapeutic exercises through the use of live video.

### **Store-and-Forward (Asynchronous)**

As the name indicates, store-and-forward telemedicine involves the secure transmission of pre-recorded materials. A wave of tech start-ups and apps have been developed to generate educational tools for patients.

A number of new apps provide tools that PTs can use to explain common injuries of the shoulder, knee and spine in layman's terms through the use of interactive anatomical 3-D models, videos and images. Videos demonstrating stretching and strengthening techniques are also a valuable resource for patients to safely and accurately execute therapeutic exercises away from the clinic.

But store-and-forward applications don't just benefit patients; they also strengthen communication between providers by facilitating the transmission of documented patient history including videos, digital images, lab results and health records. Asynchronous platforms designed for this purpose provide the means to quickly exchange protected health information in a secure manner.

This technology is often employed when a physical therapist needs to evaluate a case or render a service outside of a live interaction, such as accessing diagnostic imaging studies and reports.



Clinical store-and-forward applications have become quite common, enabling faster diagnoses and better treatment strategies, especially in settings where specialists may not be readily available.

### **Remote Patient Monitoring (RPM)**

RPM technologies allow an individual's personal health and medical data to be collected and transmitted to a provider. Often used to aid chronic disease management, such as diabetes, heart conditions or high blood pressure, these platforms allow providers to track a patient's vital signs while they are at home or in a care facility.

In many cases, the RPM data is transmitted automatically, generating a report for the provider or a team of health monitoring professionals who flag unusual findings for clinical review. By providing practitioners the means to monitor for early warning signs and quickly intervene, RPM, or telemonitoring, can help patients adhere to their treatment plans and potentially reduce life-threatening complications.

The latest RPM technology for telerehabilitation guides patients through exercises and, using cutting-edge motion-tracking technology, track their movements to evaluate effort and ensure they are doing them correctly. The physical therapist receives the performance data, and the patient receives real-time feedback and tips as they perform the exercises. Duke University plans to research the effectiveness of the system in its in-progress **2017 study**<sup>14</sup>.

## » A Look to the Future

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There will always be instances when telehealth is not a suitable situation, but in many cases it represents a more direct route to recovery. In a world where people use apps to track everything from fitness and eating habits to nightly sleeping patterns, it is easy to imagine a healthcare system where the link between technology and physical medicine is strengthened. Where, through the latest technologies, patients can reach their healthcare providers quickly and easily, and where injured workers are guaranteed the therapeutic support they need when and where they need it most.

As the practice of telerehabilitation becomes more prevalent, buy-in from injured workers and their employers will increase. It is only a matter of time before telerehabilitation becomes integrated into treatment strategies for patient-centered organizations.

Now is the time for payers to establish a standard of care and a foundation of interest as we anticipate increased user growth, advancing technologies and expanded clinical capabilities in the years to come.

## » Meet MedRisk

MedRisk has been specializing in managing medical care for injured workers since the early 1990's. They are known for their innovative approach and clinically based solutions for the workers' compensation community.

**For more information on MedRisk's managed physical medicine program, visit [medrisknet.com](https://www.medrisknet.com)**

## » Sources

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