Virtual Physiotherapy
An emerging discipline that can deliver better outcomes in some cases
Introduction to virtual physiotherapy

Virtual physiotherapy is an evidenced-based assessment and treatment method that can be delivered through video or telephone consultation.

Whilst it cannot replace all face-to-face interaction, it is an effective and appropriate method of care for the majority of non-complex musculoskeletal conditions and the assessment and ongoing treatment of these.

Virtual physiotherapy covers a range of services, with best practice solutions including:

- Digital triage - patients answer a series of questions online and intelligent software helps to determine the most appropriate care pathway to meet the needs of the patient

- Remote consultations - physiotherapists deliver videocall consultations using technology that enables exercise videos, advice and education, and patient records to be accessed during the appointment

- Self-management - advice, education and digital exercise prescriptions are accessed by the patient at their convenience through an app that supports video content, progress trackers and other tools that encourage education and engagement

When many people think of physiotherapy they think of manual therapy, but while this is an important part of a clinician’s work it is only one element. Clinicians can use virtual physiotherapy to provide education and advice to help patients manage and improve their symptoms. They can also guide patients with self-management and progression support techniques, including exercise therapy and rehabilitation, self-joint mobilisation, self-trigger point release and other soft-tissue treatments and functional movement re-education strategies. Clinicians can also advise on the purchase of appropriate home exercise equipment and other off-the-shelf devices which may support recovery, such as wrist splints or supports.

Until fairly recently, virtual physiotherapy services represented the minority of support offered by both the private and public healthcare sectors. This was until the Covid-19 crisis created a sudden need for digital services to be rolled out more widely across the industry.

This report aims to deliver best practice advice for the industry based on more than 12 months of virtual physiotherapy treatments administered through an award-winning app. The findings are informed by data from 27,000+ patients, learnings from virtual physiotherapy expert clinicians and feedback from patients that have been through the process.
The impact of COVID-19 on physical injuries and digital health

The Covid-19 outbreak and resulting UK lockdown put a halt to in-clinic rehabilitation treatment for thousands of patients. Prior studies that map treatment adherence against outcomes suggest that this break in treatment could have a huge impact on long-term outcomes for patients who didn’t access alternative support.

The unique set of circumstances created by the crisis also increased the chances of many people developing new injuries, further enhancing the need for physiotherapy services. Publications aimed at runners warned of the perils of many people upping their mileage too quickly, a study in the Bone and Joint Journal reported a 26% rise in the number of DIY-related hand injuries, the British Orthopaedic Association reported a rise in trampoline injuries and research by Ascenti showed that home-working from the sofa for sustained periods had left half the workforce in pain.

Providing further evidence of the impact of this, Google Trends data shows that in the eight weeks following the lockdown being introduced on 23 March, there was a 102% jump in searches for advice on knee pain, a 91% rise in searches for sprained ankle content and an 86% increase in the number of searches for articles on shin splints.

As lockdown measures ease, at the time of writing there are also concerns about how deconditioning could cause a new spike in injuries. The NIHR Nottingham Biomedical Centre said increases in sedentary activity will have impacted metabolic function and muscle volume, particularly for older people, a number of athletes have cautioned about the injury risks of rushing back to competitive sport too quickly and the British Society of Rehabilitation Medicine has warned that those recovering from Covid-19 will have experienced severe deconditioning, which could increase their chances of injury.

In this environment, The Lancet reported that telemedicine is being embraced ‘like never before’, while a webinar by the Healthcare Information and Management Systems Society (HIMSS) predicted that the growth in adoption of digital health services will continue post Covid-19.

Comparing the results of virtual and in-person treatment

Background

As a world-leading provider of virtual physiotherapy, with an award-winning digital service that has been in operation for 12 months, Ascenti wanted to use its data to explore how the results of online care compare with in-person support.
A comparative observational study was conducted using data collected from routine care provided by qualified Ascenti physiotherapy practitioners. Patients involved in the study were referred to Ascenti for a range of needs.

The study involved exporting anonymised data that mapped the treatment journeys of 27,096 patients who had accessed virtual physiotherapy support before and during the Covid-19 crisis - running up until 10 June 2020. Of this population, 9,506 had received virtual-only treatment, while 17,590 had received a mix of virtual and face-to-face care.

A control group was then built using the data of 6,226 patients who had been treated with in-person physiotherapy only.

**Interventions**

The study compared three options:

- **Virtual physiotherapy only** - all treatment sessions delivered via videocall using the Ascenti Physio app, which also enables patients and clinicians to access videos and patient records within the call and afterwards at their convenience.

- **Face-to-face physiotherapy only** - all treatment sessions delivered in one of Ascenti’s 300 community clinics. Treatment could include manual therapy as well as exercise prescriptions and advice, all delivered in-person. This treatment did not include access to the Ascenti Physio app.

- **Integrated virtual and face-to-face physio support** - a mixture of face-to-face and virtual physiotherapy treatment, including at least one visit to a community-based clinic and full access to online appointments and tools through the Ascenti Physio app.

**Results**

The analysis revealed that patients are open to trying virtual physio when it is recommended to them. Upon the closure of Ascenti clinics due to Covid-19, 81% of patients agreed to have virtual sessions and continued with them beyond their first session.

81% of patients agreed to virtual treatment when in-clinic services were paused due to Covid-19

Measured on a 10-point pain Numerical Rating Scale (NRS) all patient groups saw significant reductions in their levels of pain following treatment, regardless of what type of treatment they accessed and regardless of the severity of their injury or condition.
In the population-level analysis, patients that combined face-to-face treatment with virtual sessions delivered through the app saw the biggest improvements, moving from a 5.4 NRS score at initial assessment to 1.8 at discharge - an improvement of 3.6 points on average. Patients who only accessed face-to-face treatment reduced their pain by 3.4 points on average, while people who were treated virtually and didn’t see a physio in-person improved by an average of 3.1 points.

Further analysis was then conducted to explore how virtual appointments compared with in-person physio when treating different pain levels. The study found that for patients whose NRS score was low or medium, the difference in results between virtual and face-to-face interaction was negligible. Patients with a low NRS score at initial assessment saw an improvement of 1.5 from virtual treatment compared to 1.6 from face-to-face, while patients with a medium NRS score improved by 3.5 with virtual physio compared to 3.6 with face-to-face.

As might be expected, the study found that the difference in outcome between virtual and in-person treatment was more pronounced for patients that scored high on the NRS scale at initial assessment. However, while those patients who only accessed face-to-face treatment did see a 5.2 point improvement, those who were treated virtually still saw a substantial 4.7 point improvement without any manual therapy. This suggests that, even for more severe injuries or conditions, digital treatment remains a viable alternative to in-person physio, while the best results for this group - and overall - were enjoyed by patients that accessed integrated support.

One additional finding from this data supports the idea that engagement in exercises improves outcomes, over-and-above any manual treatment and face-to-face interaction. Patients whose anonymised records showed they accessed exercise videos through the app as part of their virtual treatment saw the biggest improvements in every severity category (low, medium and high NRS). Overall though, integrated support still achieved the best results, perhaps because a greater proportion of patients with high NRS scores were treated with this method.

A final and important finding is that the data suggests that patients who access virtual physiotherapy services are happy with the results. Survey data showed that 92% of patients who were treated virtually were satisfied with its effectiveness and 77% would be ‘extremely likely’ to recommend the service to friends and family. While this is slightly lower than the results for face-to-face treatment, which were 97% and 81% respectively, it is likely that the gap will close further as trust in virtual physiotherapy increases.
Limitations

It is important to note some of the natural limitations of this study. This study is based on the experiences of patients referred for physiotherapy treatment for a range of needs. Some of the conditions were gradual onset, while others were traumatic. The results must therefore be interpreted as general findings and it should not be assumed that they apply equally to all injury types - for example those involved in Road Traffic Accidents.

In addition, many of the patients that fall into the integrated treatment category were being seen face-to-face before the Covid-19 lockdown and in some cases their virtual treatment was just for their last one or two sessions. Finally, some of the patients that did not transition to virtual treatment may have had more severe conditions that would have responded less well to remote treatment. It is likely that these factors will have had some influence on the clinical outcomes recorded in this data, however, it is felt that it wouldn't have significantly changed the overall picture.

Further research

It would be beneficial to conduct further research that is targeted at measuring the results of virtual physiotherapy on different injury types, for example Road Traffic Accident trauma cases or more serious sports injuries.

It could also be useful to explore whether the convenience of virtual treatment increases the likelihood of people seeking support for their conditions and whether it increases people’s adherence to an ongoing programme of rehabilitation.

The advantages and disadvantages of virtual physiotherapy

Advantages

Supporting patients with their physiotherapy needs through a virtual service holds a number of advantages over in-person care. These include:

- Convenience - Patients are often delighted to be able to access treatment from the comfort of their own home. It saves them an enormous amount of time as they only need to set aside 30 minutes for the appointment itself rather than account for travel time and there is no need to arrange childcare, transport or book time off work. The convenience of this may make them seek early treatment and maintain a course of treatment for longer, as appointments will be less disruptive to their lives.
Patient-centred treatment - While patients attending an in-clinic appointment often expect hands-on treatment, virtual physiotherapy enables a more holistic patient-centred focus. The format encourages more conversation and provides the clinician with a better opportunity to ask questions and provide bespoke advice, education and reassurance, while also tackling some of the psychosocial aspects of pain. Some clinicians can really excel in this area.

Patient engagement - due to not being able to receive manual therapy in a virtual appointment, many patients recognise that the onus is on them to use the sessions to take control of their own rehabilitation. This approach encourages accountability and can be very motivating for the right patient as they become more engaged in the information and advice they are given.

Insight into home situation - a virtual appointment enables the clinician to gain a better understanding of the patient’s home environment. They see what home exercise equipment they can access and what space they have available, and they may get a chance to review things like their home-working set-up, which could be useful if that has contributed to their injury. These kinds of insights, which aren't available in a typical in-clinic appointment, can enable physios to provide bespoke advice that is more tailored to their circumstances.

Digital tools - best practice virtual physiotherapy doesn’t stop with a videocall appointment; rather, innovative digital health platforms like the Ascenti Physio app can provide patients with access to a range of tools. These include demonstration videos, goal-setting facilities and progress trackers, which can all be accessed inside the appointment and afterwards. These tools can also provide notifications and reminders to encourage greater adherence to prescribed exercises.

Appropriate referrals - digital triage removes the strain of inappropriate referrals on healthcare services by directing patients towards services that best meet their needs. This avoids wasted time for both clinicians and patients and improves cost-effectiveness, while ensuring that capacity is used appropriately.

The disadvantages of virtual physiotherapy

Missing the power of therapeutic touch - this can be an important point from both the patient’s and the therapist’s perspective. Manual assessment and treatment can provide the opportunity for the clinician to feel different tissues, tension, spasm, and depth of symptoms, which is necessary in some cases and cannot be recreated virtually. There are times too when patients report that they feel they need someone to press, stretch and release areas that they just can’t reach through home exercises. Being in the same physical space as a patient also gives clinicians the opportunity to use their hands to correct movement and exercises to help patients to follow them correctly. The use of touch to demonstrate empathy or offer support at times of distress or upset, which can be an important part of compassionate care, is also missing.
• Lack of opportunity for diagnostic tests - there are a number of diagnostic tests that physiotherapists can use to aid their decision-making and screen for problems such as neurological loss. Some of these tests can’t be modified for a virtual call and so this could leave a gap in clinical reasoning that could reduce effectiveness in some cases and, in a small number of cases, could lead to safety issues.

• Reduced trust for some patients - some patients may be more likely to trust a diagnosis that is given to them after a physical examination. This could be partly because they don’t feel confident in their own ability to describe their pain and symptoms or it could be because virtual physiotherapy is still relatively new. Certain situations, for example asking a patient to undress or uncover an area for examination, can also feel more awkward over video than in-person.
The future for virtual physiotherapy

With a Covid-19 vaccine not expected to be available until 2021 and many people likely to want to minimise their risk of infection until then, it is likely that the need for digital healthcare services will remain high in the short-to-medium term.

This will provide the opportunity for clinicians and technologists to add new innovations, strengthen their evidence base and support more patients using this emerging treatment option. All of these things will help establish a greater trust in virtual physiotherapy.

As we eventually move past Covid-19, familiar barriers to in-clinic treatment will re-emerge to front-of-mind, with patients putting off accessing support due to lack of time, family commitments and the inability to travel. It is likely that virtual physiotherapy will become an increasingly attractive option for people in these circumstances.

The results of this study - potentially the world’s largest study of virtual physiotherapy conducted so far - demonstrate that patients who access digital support to help them with MSK injuries can achieve excellent results.

While there are some treatments and diagnostic tests that can’t be modified to be delivered virtually there are huge benefits in convenience, patient engagement and patient insight that can help make up for that. Even more excitingly, digital leaders are creating innovative apps that support education, motivation and behaviour change inside the videocall and outside it too, available to be accessed 24/7.

Key to the success of virtual physiotherapy going forward will be the ability of healthcare providers to identify the circumstances when this treatment should be offered; providing the right treatment, at the right time, to the right patient through the right clinician.

• Right treatment - virtual physiotherapy isn’t the best way to treat all conditions and healthcare providers will need to know when in-person treatment might be a better option, and when there simply isn’t an alternative to manual therapy as part of their care.

• Right time - in many cases the best journey for a patient will be a combination of virtual and in-person treatment, and it will be up to the healthcare provider to understand when to offer each in order to best treat the condition and achieve the best adherence from the patient.

• Right patient - some patients will be more motivated by the extra accountability of virtual physiotherapy and more confident in using the technology, while others will be more comfortable with - and therefore see better outcomes from - traditional in-clinic sessions.
Healthcare providers must become adept at recognising what will get the best results for each particular patient.

- **Right clinician** - virtual physiotherapy is, in many ways, a very different discipline. Some clinicians are experts at winning patient engagement, picking up on signals in body language or the home environment and using technology to its full advantage, while others truly excel in an in-person environment and in delivering manual therapy. Healthcare providers should ensure they deploy their clinical talent most effectively.

The results of this study of 27,000+ patients shows that, in many cases, online and video physiotherapy treatment can achieve the same strong outcomes as in-clinic, as long as this treatment is delivered effectively by digitally trained physiotherapists using purpose-built technology and accessed by patients who are empowered to take a greater role in their own rehabilitation.

For patients with more severe injuries it is likely that in-person treatment will be needed for them to achieve a full recovery, but virtual therapy can still be a part of their journey too and can make regular appointments and check-ups easier and more convenient.

Ultimately, it appears that the very best results are achieved when patients benefit from a mixture of innovative digital care and elite-quality in-person treatment to support them through the different stages of their treatment journey. Deployed together, this combination can help raise standards in the profession and enhance physiotherapy results overall.
About Ascenti

Ascenti is the leading independent provider of physiotherapy and selected clinical outsourcing services in the UK. It is a trusted partner to more than 20 NHS Clinical Commissioning Groups (CCGs) and 400 private businesses across the UK, serving NHS patients, pay as you go customers and private medical insurance members.

With extensive national coverage, Ascenti has over 300 highly trained physiotherapists delivering upwards of 600,000 treatment sessions annually. Enabling people to make headway after illness and injury, step back in to work after accidents, or simply stay active and keep moving forward in their daily lives.

Ascenti is a dynamic and progressive company – advancing physical therapies by making them more accessible to all, raising standards and pioneering new digitally enabled physiotherapy and musculoskeletal (MSK) services through its ISO-accredited workflow platform and award-winning app, which provides 24/7 access to expert advice through digital triage, virtual consultations and tailored exercise programmes.

Top physiotherapists and elite sportsmen and women helped found Ascenti and continue to lead it today, constantly shaping and improving its clinical approach. Ascenti physiotherapists are employed by the organisation and every clinician undertakes a minimum of 100 hours of protected training and CPD time annually as part of the company’s award-winning Clinical Development Programme. This helps Ascenti to maintain consistently high standards of governance and keeps them at the cutting edge of the latest technologies and treatments.

For more information please visit www.ascenti.co.uk
Kim E. Barnett, age 36 from London

“I started to get really bad neck and shoulder pain after a few weeks of working remotely. I didn’t have a proper working environment set up and it definitely started taking its toll. I was in a lot of discomfort, resulting in me not being able to turn my head. It got so bad that it impacted on my sleep and some nights I was only able to get 1-3 hours of sleep.

“I have a condition that puts me more at risk if I become infected with Covid-19, so I didn’t really want to leave the house in the current climate and my injury would have made travelling more difficult too. I had no idea that virtual physiotherapy was an option.

“I was recommended to Ascenti’s virtual physiotherapy service by my health insurance provider, Vitality, and it turned out to be just what I had needed. The clinician asked me a series of questions to find out more about the pain I was experiencing, if it was causing any limitations in movement and what impact it was having on my life. She also reviewed my home office set-up. We then ran through a series of exercises, mostly with her sharing videos with me during the call and also another one that she demonstrated herself. After the call I received links to those videos and some additional useful information and we had follow-up calls after two and three weeks to review my progress.

“I started to see improvements really quickly after the appointment. Within two days I could move my head again and not long after that the pain was dramatically reduced through continuing the exercises daily. I found the whole experience really quick and efficient and I thought afterwards how, if I were to have taken time off work and travelled to a clinic to be told the same thing, it would have felt like a much bigger undertaking - particularly as I wouldn’t have been able to drive at the time due to the injury. Since the treatment, I’ve been talking about the experience with friends and colleagues and a number have gone on to give it a try themselves. I’d definitely recommend it.”
Judith Rue, age 53 from Derbyshire

“I had carpel tunnel surgery on my wrist in February 2020. I was really struggling with my recovery and had complications afterwards. I’m a Care Worker looking after young adults, so I still needed to work but the pain meant I was only able to return for a couple of weeks before going off again. My wrist was limiting my day to day life and mental health. I couldn’t drive, I couldn’t cook, clean, walk the dog or even get dressed on my own in the morning. I was left feeling really low and like I was going backwards.

“Me and my consultant assumed that I wouldn’t be able to have physio until the coronavirus crisis was over, but I looked on the Vitality website and found that I could book an online video consultation with a physiotherapist myself. I booked an appointment online that same day and within hours I was speaking to Alison, a Physiotherapist at Ascenti.

“The whole processes couldn’t have been easier, and the video consultation was like a breath of fresh air. I felt understood and validated, and like there was light at the end of the tunnel for the first time in months. It felt like a lifeline.

“I was sceptical about online physio, but after just one session I felt better. I can’t believe how well it has worked. Two weeks after following my treatment plan and exercise videos that are available to me online, and I am working again and able to live my life to the fullest. I’ve reduced my pain medication and feel much happier about the future.

“I’m sharing my story to let others know what a great service this is and that online physio with Ascenti is an option that really works. You don’t need to suffer at home like I was and wait to see a physio in the flesh.”
Joseph Bill, age 31 from London

“I injured my hip earlier this year training for the London marathon. You tend to get injuries when you start doing serious mileage and a friend of mine got a similar injury just a little before.

“I was quite open to virtual physiotherapy as I had an idea of what the injury was already. I really just wanted confirmation and to get access to the right exercises.

“The appointment was great. It was quite interactive, with the physio asking a lot of questions and me talking through the detail of my injury, including where the pain was and what movements made it worse. There was a lot of input from me and the clinician was able to diagnose from this and prescribe the exercises that would give me the best results.

“That was a couple of months ago now and I’ve been really pleased with the recovery. I’m out running again and gradually increasing my mileage with the aim of getting back towards marathon fitness.

“I think virtual physiotherapy is a great option for people with relatively minor complaints as it’s much more convenient than an in-clinic appointment but far more effective and personalised than just accessing general information. It’s also a good option for people who have experience and understanding of injuries and can talk through their self-diagnosis to get confirmation from a clinician.

“If I had a more serious injury, personally I’d definitely want to visit a clinic for a diagnosis but, after the first session, it makes sense for follow-ups to be virtual. So, for me, having a mix of in-clinic and virtual would probably be my preference.”
Roisín Ní Chonghaile, age 33 from London

“I work in an office and, over a period of time, I think my seating position led to my upper body becoming quite tense and I developed pain in my neck and shoulders.

“It was recommended that I give virtual physiotherapy a try and I was open to seeing if it could solve my problem. It was a great experience and I found the information and guidance provided really useful - it was such an efficient way of getting support and advice.

“I've used in-clinic physiotherapy several times in the past and know from experience that manual treatment can really make a difference, so I don't think virtual physiotherapy could ever replace that completely. In my mind they are almost two different things and it probably depends on the injury as to which would be the better option. I imagine that the best experience would probably be a mix of the two, for example a manual therapy session to help with a bad injury and then a virtual follow-up to monitor progress without the need to travel or take time off work.

"The virtual session was plenty enough to set me on the road to recovery though and I didn’t need to even leave the house, so I'd definitely be open to trying it again if the circumstances arise.”

"It was such an efficient way of getting support and advice.”
Jennifer Smith, age 47 from Hounslow

“A couple of months ago I developed a painful clicking problem with my knee. It felt as though it needed to be clicked into place but sometimes it just wouldn’t happen and this went on for several weeks. I was finding it really hard to get up off the chair or bed due to the injury and it even felt awkward to walk. I spoke to my doctor a few times but nothing seemed to help.

“I was recommended to virtual physiotherapy and in normal circumstances I may have been a little sceptical. However, in the current situation with Covid-19 I had a completely open mind and was keen to give it a try.

“The initial assessment was great. The physiotherapist got me to do a few exercises and she was able to see me doing these through the screen. We worked out which movements were causing the most pain and she prescribed me some exercises using videos that I accessed within the call and afterwards. She also gave me some really practical advice and tips such as to try sitting on a cushion, as being higher will make it easier to get up - and I found that really helped too.

“That was four weeks ago now and, after a couple of follow-up appointments, I’m nearly back to 100%. Getting up is so much easier and I’m walking around without pain too. I hadn’t been able to ride a bike for a good while as a result of the injury but I’ve since been out on it a few times now and that’s really helped to keep my little one happy as well as me, so I’m delighted with the results.”
Physiotherapist experiences

Kalemba Matthias Mutyaba  
Senior Physiotherapist, East Midlands

“Virtual physiotherapy sessions can be a great alternative to face-to-face care and can also complement the treatment being provided in-clinic.

“When I was first introduced to the idea of virtual physio, I must admit that I was unsure of how well it would translate, when so many of my skills had been developed in-clinic. However, following extensive training, within a few days I started to bridge the gap and even noticed a number of benefits over and above what you can achieve in face-to-face appointments.

“With virtual treatment there is a lot more onus on the patients to take control of their rehabilitation. I have found that, in many cases, it is possible to use their subjective assessment to empower them to explore their condition to achieve the same results as they’d get in-clinic. The exercise demonstration videos that are built into the Ascenti Physio app make it easy to help patients understand the movement they need to achieve and, because they can access the videos again after the session, they are less likely to forget how to do them. I also found that virtual sessions provided an opportunity for me to understand the patient’s environment and to provide advice that addressed psychosocial factors.

“Some of my patients began virtual treatment because of the Covid-19 lockdown and they told me that they were more likely to keep up with their exercises - perhaps because they know that their recovery is more reliant on them sticking with the programme - and this was helping to ease their symptoms.

“In the future I expect that it will be common to offer patients a choice between virtual treatment and face-to-face appointments and perhaps to integrate the two along a patient’s journey. I can imagine that in many cases a face-to-face assessment will have some benefits, whereas follow-up appointments might be more easily carried out virtually as it is more convenient for the patient.”
Nikita Mascarenhas
Junior Physiotherapist, North West

“There is a lot more to physiotherapy than just fixing a problem and I think virtual treatment is really helping to change that mindset in patients. They see that if they listen to our advice and expertise then they can recover more quickly and stop their condition turning into something chronic.

“I’ve been seeing the same positive outcomes with patients I’ve treated virtually as I do with patients I see in-clinic, even without manual therapy and the other benefits of face-to-face.

“I have found that a lot depends on the patient’s attitude and expectations. If a patient is dead-set on having manual therapy then they’re less likely to trust a virtual diagnosis and carry out the prescribed exercises, which leads to worse outcomes. On the other hand, patients that see their physio as a partner who is helping them to fix themselves, typically have a great recovery.

“There are some gaps of course, for example certain diagnostic tests can’t be carried out virtually and some patients can struggle with technology - particularly older patients - which can make things more challenging.

“Offering patients a choice and supporting them in the way that they are most comfortable - virtual, face-to-face or a mixture of the two - is the best route to success in my opinion. That’s because, once they have the right advice, the most important predictor of a patient’s recovery is their mindset, so they need to have trust in the support being offered. And, from a clinician’s point of view, being able to communicate, educate and motivate effectively is the key to using virtual physiotherapy to get the best results for your patients. That’s a key part of our skillset anyway, but it’s even more important when treatment is delivered virtually.”
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