

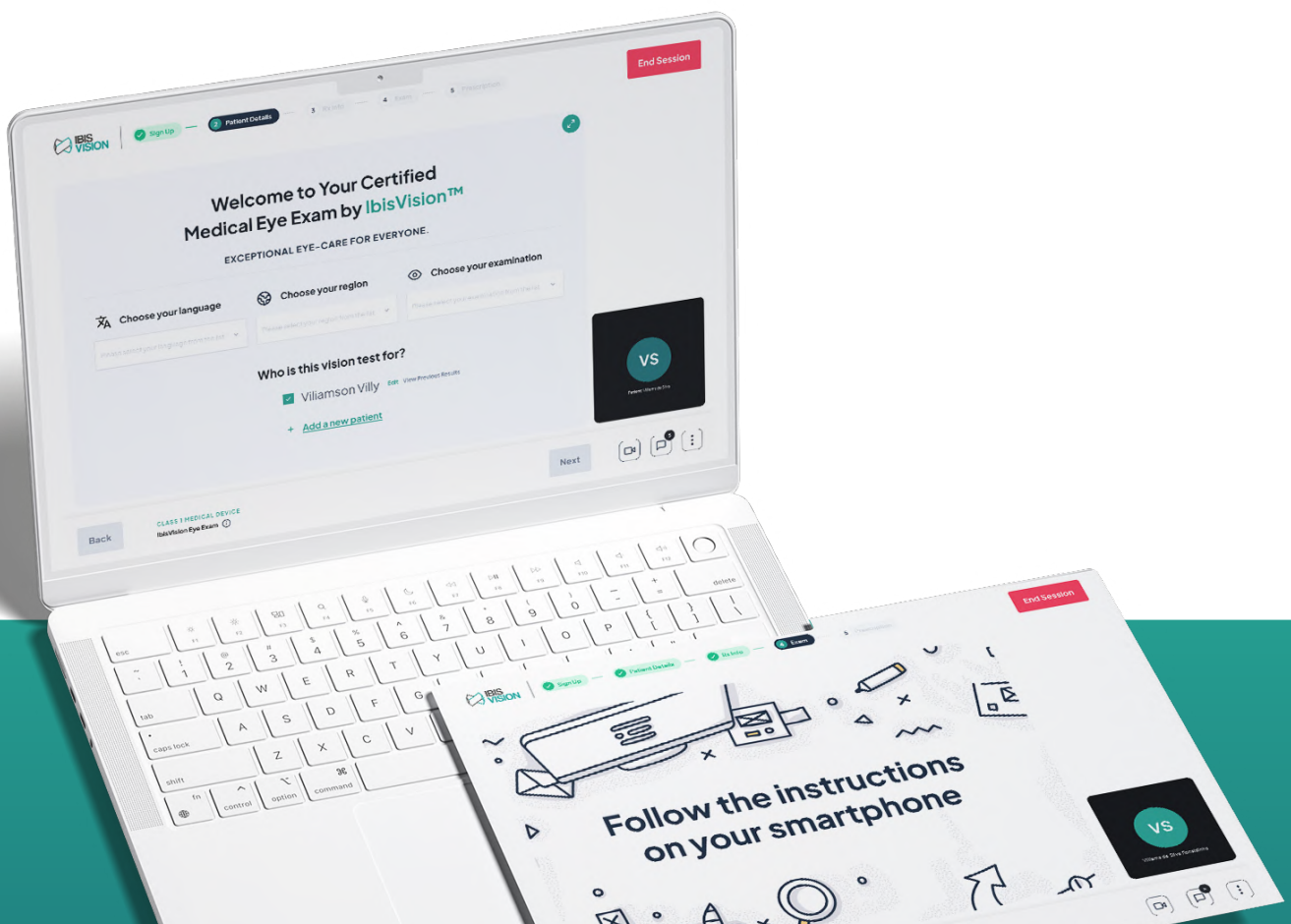
# Telemedicine and optometry

The future of eyecare

# Executive Summary

Telemedicine is quickly gaining acceptance as an exciting new channel for providing eyecare services. Optometrists and other eye-care professionals now have the opportunity to make extensive use of this new technology, potentially changing the lives of patients and staff, as well as transforming the entire patient experience.

Today telemedicine is making an impact in all facets of healthcare, and is increasing efficiency, reducing care costs, and improving the patients' experience. This paper finally outlines best practices for optical businesses looking to adopt telemedicine technologies.



# Key Terminology

The following is a list of key terms used throughout this whitepaper in relation to *IbisVision* and *IBISengage™*. These terms are referred to in the context of IbisVision's products and services, and are not necessarily representative of every supplier in the optical industry.

**Telehealth** – The use of digital tools and communication technology that allow the patient to access and manage healthcare remotely. This involves a broad scope of remote healthcare services and can also include non-clinical services such as training.

**Telemedicine** – Remote clinical services that deal with the delivery of medical services from a healthcare provider from any location. Telemedicine links the patient directly to their clinician and is especially beneficial for people who live in rural and underserved communities.

**Tele-optometry** – Eye care appointments that happen online and remotely. These are done utilising a cloud-based link.

**Synchronous** – Occurs at the same time. In this whitepaper, it refers to real-time video and audio communication between a patient and a licensed optometrist to replicate an on-site, in-person eye exam.

**Asynchronous** – Does not occur at the same time. In this whitepaper, it refers to a patient completing testing in isolation without live supervision from the eyecare professional. Exam data is collected and transmitted for the Optometrist to review after the fact.

**Artificial Intelligence** – The simulation of human intelligence processes by machines.

**Remote patient monitoring** – The use of digital technologies to monitor and capture health data which is transmitted to a clinician in a different location for use in continued care and related support.

**Remote eye testing** – The use of digital technology to carry out an eye test virtually.

**Eye tests or exams** – Testing to include near and far, aided and unaided visual acuity, K's optotypes, tumbling E's, color, contrast sensitivity, visualfield, and a neurological suite.

**Online refraction** – Refraction testing that is done virtually with the online supervision of an eye care professional.

# What do we know about telemedicine?

- ✓ in the 1940's radiology images were sent 24 miles via telephone lines in the world's first example of an electronic medical transfer;
- ✓ the 1950's brought about the first established two-way television set up to transmit information between clinicians and medical students at the University of Nebraska;
- ✓ in the 1970's, NASA also dedicated time, money, and research into telemedicine. They partnered with the Papago (now Tohono O'odham) Nation of Southern Arizona 'to establish the Space Technology Applied to the Rural Papago Advanced Healthcare Project.' This was an important step in developing remote techniques for rural locations

While telemedicine might not yet have replaced the classic, in-person consultation and procedure, we're continuing to see an increase in its prevalence.

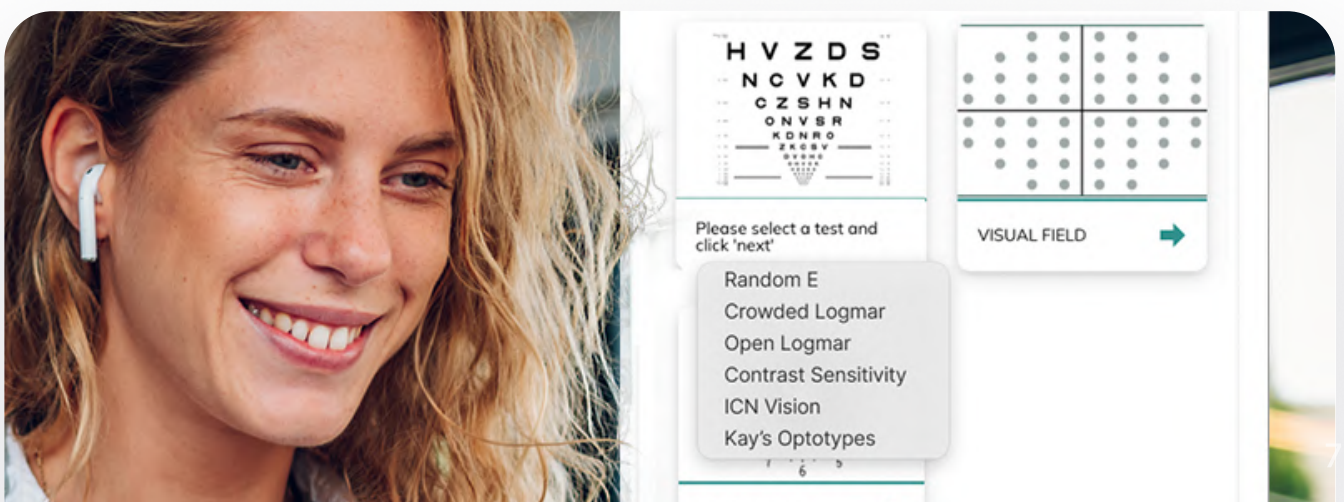
As the technology has developed , so the broad population has become aware of the possibilities with McKinsey research showing that “between 40–60% of consumers express interest in a set of broader virtual health solutions, such as a ‘digital front door’ and ‘lower cost virtual–first health plan.’”

Telemedicine is already being used in several ways across the healthcare industry. Some clinics and practices are already offering virtual visits for patients, meaning they can see healthcare providers from the comfort of their own homes. We are now seeing methods of remote patient monitoring expand with technology such as wearable biosensors that measure and transmit vital signs back to a patients healthcare professional. This method of remote monitoring is being utilised to support those with long–term chronic diseases such as COPD. Another field where are seeing telemedicine utilised is in dentistry where a patient can consult with a dentist via mobile app, sending photos and having virtual consultations whenever required.

As is widely recognised, the Covid pandemic and subsequent lockdowns led to a surge in demand for remote healthcare solutions. Remote consultations have continued post pandemic where a physical examination isn't required, where it acts as a convenient method of treatment for the patient, and where it can be more cost effective for the provider and the patient.

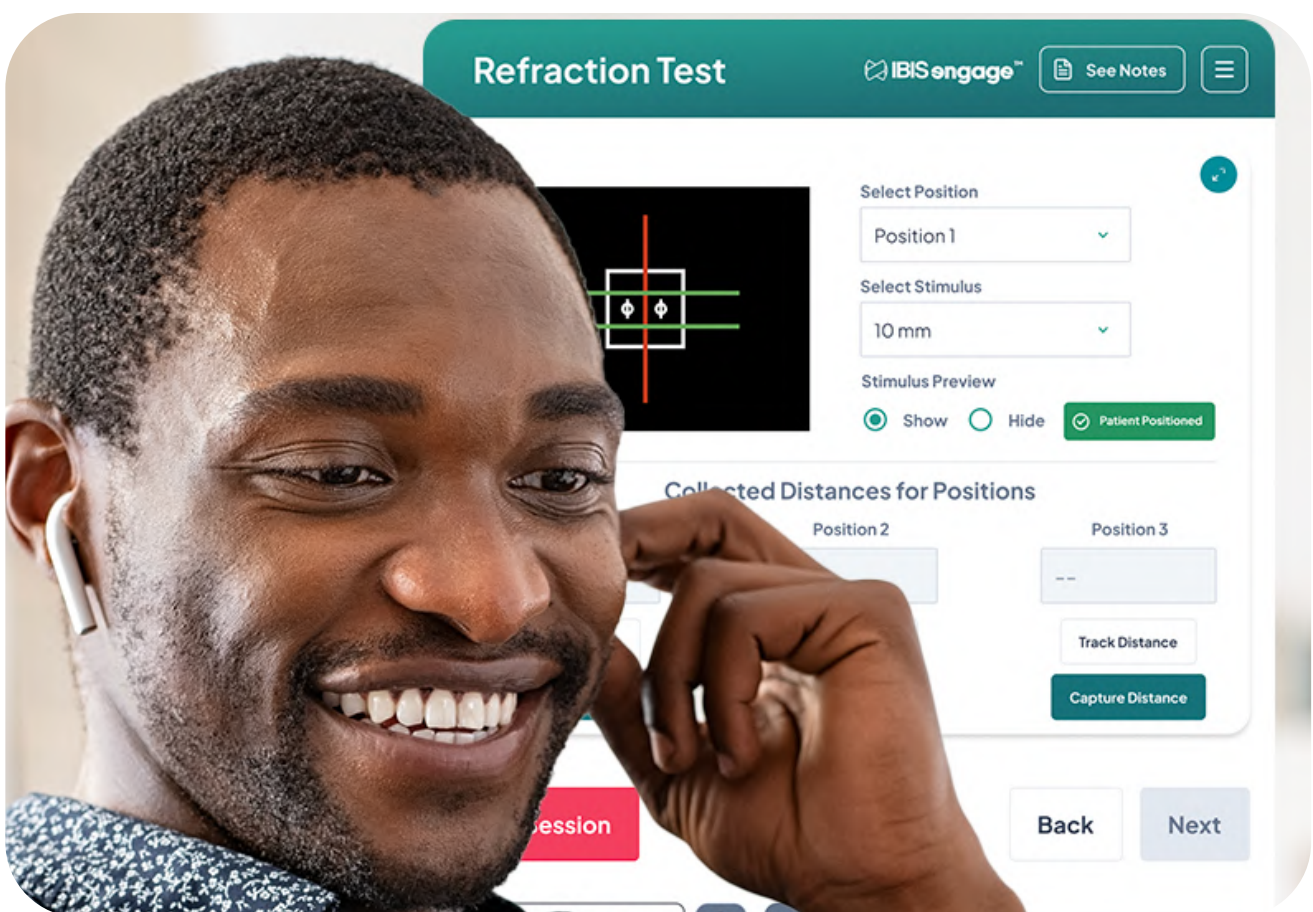
Optometry is now looking at adopting telemedicine techniques allowing for remote testing and monitoring with interest at an all-time high.

A survey from the Vision Council has shown that American adults spend a significant amount of time using digital services in general. Of the 3,102 people studied, more than half admitted to purchasing eyewear online with 90% going onto say that they enjoyed the experience and would do it again. This suggests acceptance and demand could stretch outside of the retail experience and into other eye care services.



Already, many eye care providers allow for appointments to be booked online with an online booking system. It, makes sense therefore, to extend this to virtual appointments and even online testing.

As many in the industry look to what solutions are out there in the hope of implementing them, the consequences of not adopting such technologies could leave professionals lagging behind. From losing customers to faster moving organisations, to missing out on extending customer base, the consequences could be seen to outweigh the cost.





# Existing successful telemedicine solutions

Companies are already providing telemedicine services that are widely accepted and used by both professionals and patients.

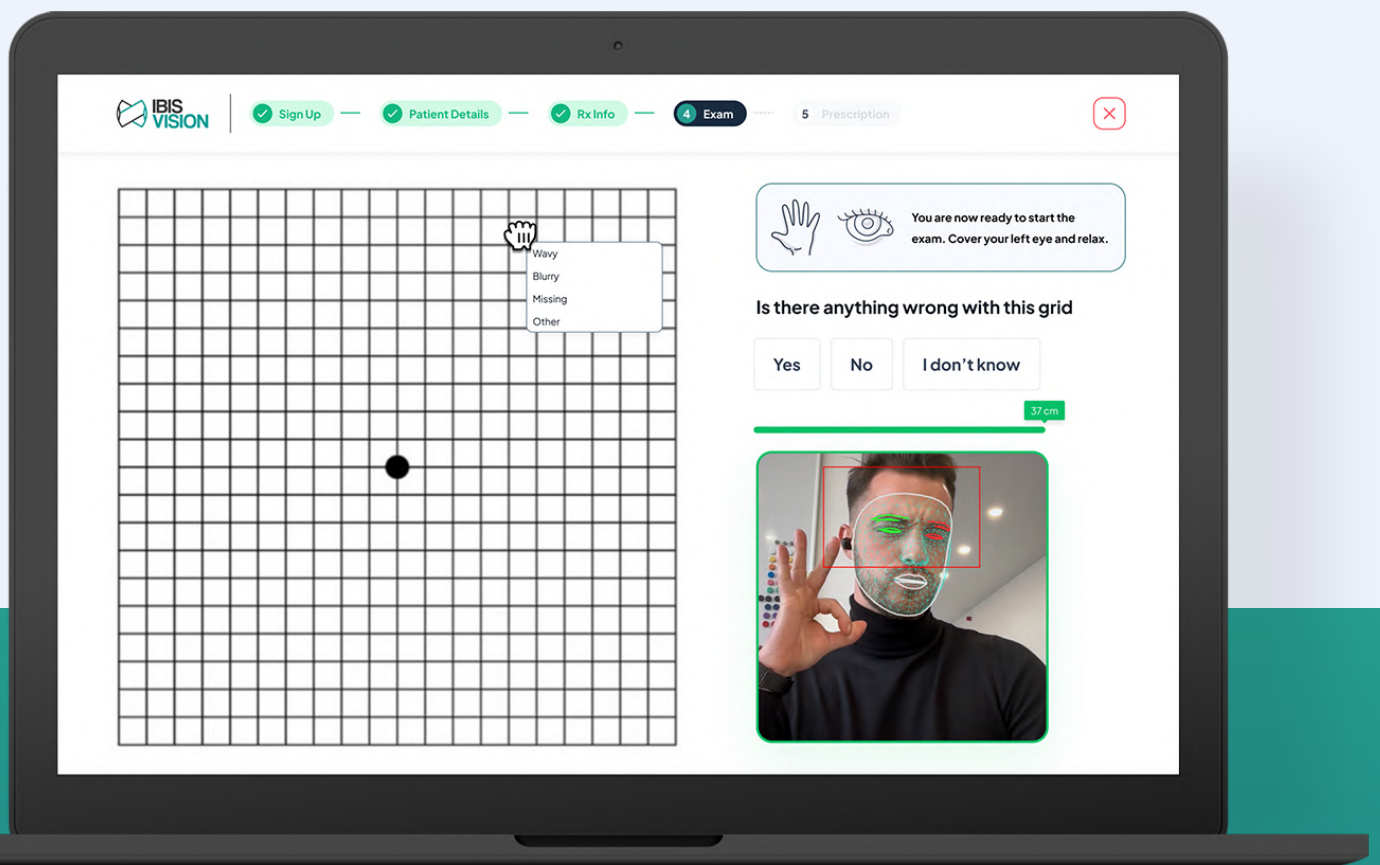


Teladoc were one of the first telehealth companies in the United States and is favoured by physicians and patients alike for its range of care solutions. From physical health to mental health, Teladoc has brought forward a solution that takes patients from hospital to home with a click of a button. This solution helps with primary care, mental health, condition management and speciality healthcare. And, with over 50 million virtual visits completed with the technology, it's reasonable to say they are encouraging the use of telemedicine through their solution.



eMed (formerly Babylon Health) gives quick, easy access to GP's, physiotherapists, nurses and pharmacists from any device and companies like Shell, the NHS and HSBC are using it.

Through this innovative and interactive technology, over 13 million consultations and AI interactions have taken place; an incredible number for telemedicine communications. With the ability to book an appointment online, patients can gain access for a number of ailments including skin problems, common infections and chronic condition care. eMed have built up an incredible network, giving patients access to essential care when and where is convenient for them.



# Telemedicine – the potential

The potential value in adopting telemedicine solutions is clear. High rates of smartphone ownership mean that remote exams can be made available to a substantial population. These benefits could be extremely positive when integrated correctly into an organization's current processes:

## Build a patient base

The patient base could be dramatically expanded with the use of remote testing solutions. Telemedicine technologies provide a means of easy access and appointment scheduling that allows organisations to see a reduction in late or no-show patients. For providers, it may lead to increased patient numbers as the potential market expands to those who might not have been able or willing to access services in a conventional manner. The introduction of telemedicine solutions to expand the patient base is particularly popular in countries where much of the population reside in rural areas.

## Greater flexibility

With appointment scheduling comes various considerations for accessibility such as travel, travel time, time off work, childcare and other factors. Telemedicine can reduce these problems which gives the patient more flexibility on when they can make their appointment. This can also be even more convenient in emergency situations where the patient can be triaged remotely.



## Collaboration opportunities

Telemedicine offers the opportunity for collaboration between optometrists, doctors, stores, clinics, learning institutions, government organisations, and hospitals. Telehealth platforms create the means to make these connections. Combining expertise adds value for the organisation and its patients, while providing easier access to people and data.



## Save time and money with remote monitoring

Telemedicine platforms can reduce the relatively costly amount of time spent in clinic. Time can be saved on unnecessary patient appointments and can be used for follow-up appointments. As an example, IbisVision's remote refraction takes around 2 minutes compared to an in-clinic subjective refraction which can be anywhere from 6–12 minutes. For patients that have conditions that require constant remote monitoring, telemedicine is a perfect way to provide clinical care without having to bring them out of their home and into practice.



## Telemedicine can help provide superior care

When properly used, telemedicine creates opportunities for patients to provide in-depth data on themselves, their conditions, and future needs before they've even spoken to their healthcare professional. This can lead to increased satisfaction as your organization can get a headstart on treating patients and anticipate their needs. From the patient's perspective, more flexible options mean better health care and improved outcomes.

# Some telemedicine solutions already in use in the industry

Recent year have seen an increased introduction of telemedicine solutions into the optometry sector:

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Brillen UK introduced a two-step buying process where the patient has an initial refraction performed remotely by an overseas practitioner, supporting in UK staff shortages as well as reducing the time spent by patients in clinic or stores. A follow-up and health-check is then performed in-person by a UK registered optometrist.

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Other examples of telemedicine use in the optometry industry include our own technology. IbisVision's online platform allows eye care professionals and patients to connect anywhere, at any time and as clinician-first pioneering technology, we are the only digital platform that integrates the clinician fully into the patient/customer experience.

# Progressing telemedicine as an optometry business

## – the steps

The first step for any business looking to expand their telemedicine processes is to map out exactly what they need and are looking for.

**There are two key types of platforms available in telemedicine:**

### Synchronous

A synchronous solution is one in which the clinician is present with the patient throughout the telemedicine consultation. This is meant to be more closely aligned with an in-person appointment. IbisVision, for example, allows for an eyecare professional to be remotely present throughout the examination process. They can see the patient's progress, offer encouragement, answer questions, and offer a full review at the end.

### Asynchronous

Asynchronous solutions offer options for the patient to complete the exam on their own. The patient proceeds through the exam using the instructions presented on the screen. An eyecare professional can then review the patient's results later and make recommendations, schedule a further consultation, or write a referral if required.

Once you've decided on an asynchronous or synchronous solution, a key task is to evaluate the software you've found.

Here are some suggestions at what to look at:

✔ What does the business and team look like, and what's the history, how is their financial stability and who are their other customers?

✔ What kind of support system do they have in place?

✔ Are there any licence requirements of using the software and what are the terms and conditions?

✔ What cybersecurity protocols are in place?

✔ Has the software been through any clinical validation? Have other healthcare professionals or bodies tried and tested this?

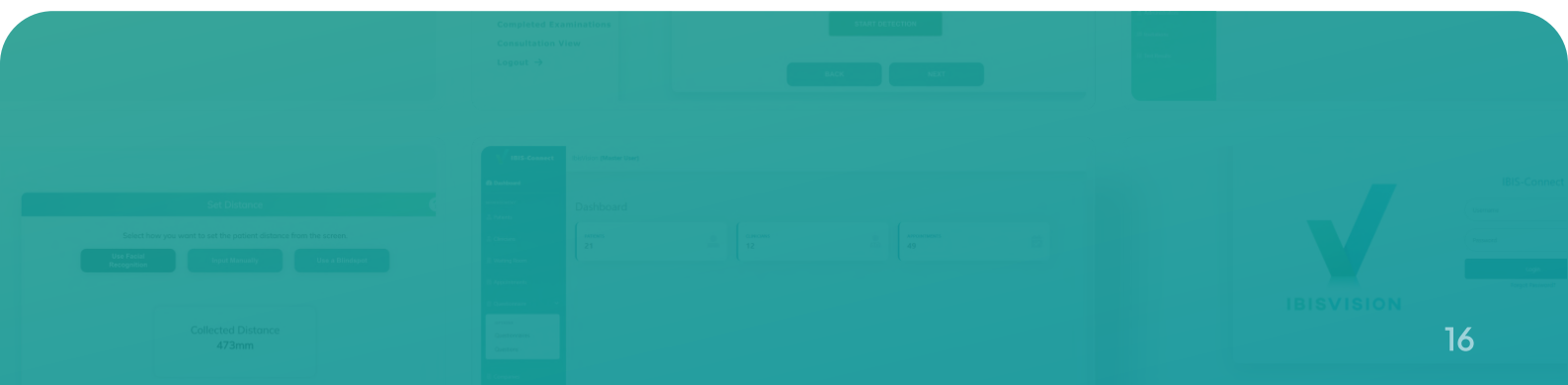
✔ Has the software been through any clinical validation? Have other healthcare professionals or bodies tried and tested this?

# Looking to the *future*

Telemedicine is not a one-size-fits-all solution, but it is becoming increasingly popular in the healthcare sector, and it is poised to have a major impact on the future of eye care. Finding safe and effective ways to implement telemedicine solutions in your organization is essential.

A recent publication, "Telemedicine in Healthcare," stated that "telemedicine can create a win-win situation." While there are some challenges to overcome before implementing a solution, it is a worthwhile journey. We trust this paper has been helpful in guiding your decision-making process regarding the adoption of new technology.

Embracing and implementing telemedicine solutions will empower you to transform your business operations and enhance the lives of your patients. Make informed choices, but don't hesitate to embrace innovation.





# References

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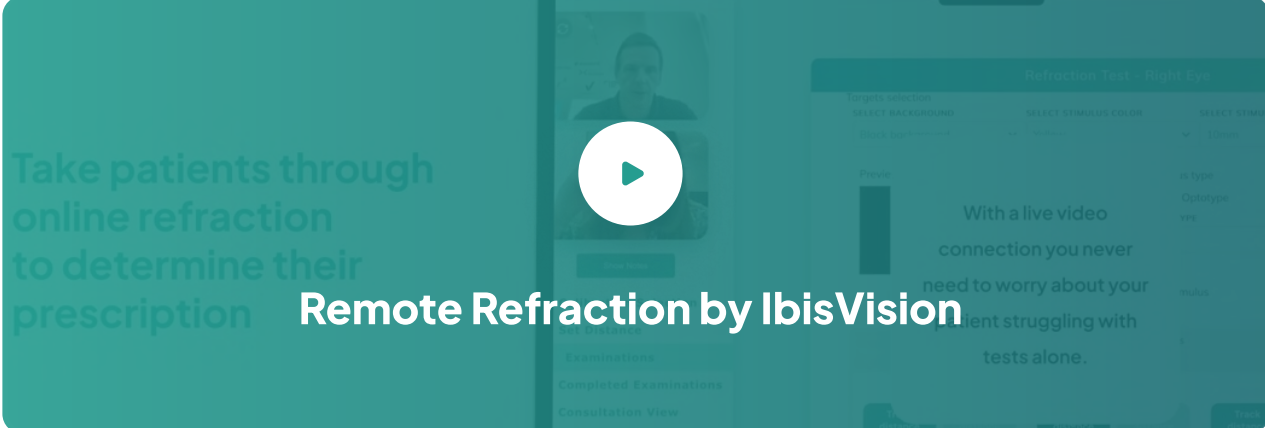
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You can find out more about IbisVision's online platform and projects which have been referenced throughout this whitepaper below.



Take patients through online refraction to determine their prescription


**Remote Refraction by IbisVision**

Refraction Test - Right eye


Select Background, Select Stimulus Color, Select Stimulus

With a live video connection you never need to worry about your patient struggling with tests alone.

Examinations, Completed Examinations, Consultation View



**IbisVision's exclusive interview on The BBC**



**IbisVision; Eye Health SBRI**



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