

Nothing has the potential to truly globalise the delivery of health services more than telemedicine. **Ben Faircloth** and **Klaus Boehncke**, Partners at L.E.K. Consulting examine how advances in technology have propelled remote consultation from the fringes to one of the fastest growing areas of medicine and discover how the main players are extending their services across borders

Care at a distance

Flu, dermatitis, tennis elbow, allergies and cancer - some of the many conditions that can be treated or supported with telemedicine. The sector is expanding rapidly, offering fast, convenient care for patients and cost-effective business models for care providers and payers.

As well as providing a convenient alternative to traditional face-to-face primary care consultations, telemedicine creates opportunities to manage long-term conditions such as asthma and cancer, promote wellness and preventive care and monitor patients' progress after they have been discharged from hospital.

For healthcare sector investors, too, it offers significant potential.

The basic premise of telemedicine is care at a distance. Using technologies ranging from a simple phone call through to mobile apps, video calls, wearables and even artificial intelligence (AI), patients are able to receive advice and treatment without a traditional-style physical meeting with a medical specialist.

Though the latest services are powered by the digital revolution of the past two decades, telemedicine's history stretches farther back. Almost a century ago, a device known as the 'teledactyl' was predicted to allow physicians to view patients remotely on-screen

and examine them using robot arms. In the mid-20th century, NASA funded

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research into telemedicine because of the need to monitor astronauts' health during space missions.

Part of telemedicine's history also encompasses physician-to-physician services, which allow specialists to support more general clinicians who are treating patients in remote communities around the world, such as in Canada through

the Ontario Telemedicine Network or in the Northern Territory of Australia by Telehealth NT.

But the latest telemedicine services centre on doctors and other care professionals dealing directly with patients at a distance.

All this technology now enables the shifting of care 'downstream', increasing convenience and cutting costs (see Figure One). For instance, AI systems such as IBM's Watson for Oncology now enable clinicians in general hospitals in Asia to deliver a level of expertise and care equivalent to top oncologists at the renowned New York Memorial Sloan Kettering hospital. In addition, providers such as Ada and Babylon Health offer mobile app technologies that directly allow consumers to self-diagnose.

The evidence is that telemedicine is an idea whose time has come. Teladoc, one of the leading providers, might record 4 million virtual visits in 2019, nearly double the number of 2018. Ada, the mobile app mentioned above, claims ten million users and six million patient queries worldwide. The global market for telehealth services will reach \$19.5bn by 2025 compared with \$6bn in 2016, according to a report by Transparency Market Research.

FIGURE ONE
THE SHIFT OF CARE DOWNSTREAM



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FIGURE TWO
CARE AT A DISTANCE OPERATING MODELS: SIX KEY CHARACTERISTICS



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Operating models

Six key operating model characteristics can be observed within telemedicine (see Figure Two):

1. Geography

Though many telemedicine providers are expanding internationally, many business models are still very local such as MyDoc, which serves some parts of Sweden, and Ping An Good Doctor, which operates only in China.

2. Patient type

Another key factor is patient type. Medgate and Teladoc will treat any patient in need of primary care. By contrast, Physitrack focuses on physiotherapy, offering more than 3,700 on-demand videos and an app that 30,000 physiotherapists use to interact with their patients.

3. Market engagement

The ultimate customer of the telemedicine company is whoever pays the bill for the virtual consultation or service. That can be a patient's employer, a healthcare professional, a health insurance company or the patient. Teladoc, for example, markets its services to employers and payers, while Physitrack's customers are the physiotherapists who use its app to reach their patients. Medgate's consultations are often paid for by payers, who in turn can offer incentives to their members for using telemedicine.

4. Content

Providers' business models can be distinguished by the content they provide and the types of customer they aim to reach. Content can range from prevention and wellness advice and coaching, such as the Happify self-improvement app and website, through to primary care diagnosis, prescribing and treatment, provided by Teladoc and Medgate. Teladoc, through the acquisition of Best Doctors in 2017, now also provides telemedical specialist care and second opinion services (eg in cancer treatment).

5. The delivery model

Delivery models vary widely. Medgate is centralised with its own staff, while Teladoc uses an Uber-like model that links qualified medical practitioners with patients. Ada uses AI powered automated models via apps and Babylon Health uses apps and video consultations, while some other providers also mix face-to-face consultations with care at a distance.

6. Infrastructure

Many of today's leaders in telemedicine such as Teladoc and Medgate started off using telephone services and, in spite of the wide range possibilities offered by digital technologies, the telephone remains the telemedicine medium preferred by many primary care customers. Nevertheless, all successful

telemedicine providers nowadays also offer a mobile app that customers can use to access services. Some apps include the option to video chat and upload images. Wearables and sensors are becoming increasingly popular. Qantas's Assure – a health and life insurance company launched by the Australian airline – uses wearables to monitor working out and sleeping, for which the company offers frequent traveller points.

Key global success factors

While the right business model is fundamental to success in telemedicine, there are a number of other influential factors.

Regulation is key and can differ significantly from country to country. Successful global groups usually launch from countries where regulations favour treatment at a distance, often using their experience to adapt to local restrictions in other markets or adding a local partner.

For example, restrictions in Brazil mean that, to date, Teladoc only gives advice, and does not provide the full diagnosis, treatment and prescription services offered by its doctors in the US. Medgate used a local partner – Telstra, the incumbent telecoms company – to launch their ReadyCare JV in Australia.

Global leaders

In South Africa and Asia

Discovery Insurance pioneered the Vitality programme, which incentivises members to live healthier by means of a points programme, similar to the frequent-flier loyalty model used by airlines. Discovery has rolled out Vitality globally, with partner insurance companies such as AIA in Asia. Qantas, the Australian airline, has used the approach to build a health and life insurance offering.

In the US

Teladoc is one of the global leaders in primary care telemedicine, active in its home US market and at least ten other countries and expecting to deliver more than 4 million consultations in 2019. The company has expanded its service offering by acquiring the Best Doctors network of specialist physicians, and its expertise includes using IBM's Watson for Oncology for best-practice cancer advice.

In Europe

Medgate from Switzerland is one of the European leaders in primary and specialist telemedicine. It claims to have the largest telemedicine centre in Europe run by doctors, and also provides local consultations through its Medgate Mini Clinics and Medgate Partner Network. A French company, Doctolib, recently became a unicorn valued at above Euro 1 billion – it provides a cloud service for appointment scheduling and recently added telemedicine to its services. Ada, an app developed in Germany for self-diagnosis, claims to have 6 million users across more than 130 countries.

In China

Globally the largest telemedicine company by far, Ping An Good Doctor has more than 1,000 physicians in China, employed for daily text-based diagnosis and treatment advice with more than 0.5 million consultations daily. A partner network of more than 5,000 specialists deals with more detailed questions.

Access to funding is also critical. Best-practice telemedicine providers have worked successfully to obtain funding from payers or providers or, when this has proved elusive, from venture capital or private equity. Ecosystem partners can also help; Swisscom, the Swiss telecoms group, was an early investor in Medgate.

Sometimes it makes sense to start at a more local level if nationwide funding is difficult. For example, local funding of GP services at the Clinical Commissioning Group level was the reason that Babylon chose to begin with one GP practice network in London.

The availability of video consultations that are open to patients from other areas has since caused significant local funding challenges that both Babylon and the NHS are working to address.

Another success marker is the provider's strategy for market entry. Providers must decide which channels to use to advertise the new service and how to win over patients used to visiting medical practitioners in person.

In several countries, GPs and other healthcare providers have been vocal in their criticisms of telemedicine – in Brazil, this disapproval resulted in the Federal Medical Council backtracking on its promise to open regulations earlier this year.

Best-practice providers therefore engage physician associations and other important stakeholders in new countries or when launching new services. It can also be helpful to engage the offline community. Physitrack has done this by providing as much value to physiother-

apists as to patients, and the face-to-face channel effectively markets the digital channel.

Lastly, concerns about data protection and technology can have a significant impact on reputation.

Funding or technical issues may force telemedicine providers to share data with third parties, and this can cause a significant backlash if exposed.

A recent study in *The BMJ* suggests that sharing of user data is routine but far from transparent. Over-hyping technologies such as artificial intelligence also risks alienating both investors and consumers if the AI claims are proven false or unsafe.

Nevertheless, in an environment of increasing demand for healthcare services and tightening public spending, telemedicine offers new options for treatment, as well as tangible benefits to providers, payers and patients.

Telemedicine is here to stay – in 2019, the Teladoc membership base is expected to grow to almost 30 million individuals in the US alone, and Ping An Good Doctor in China, which is even larger, will have more than 0.5 million consultations every day.

And, with several large countries (including, most recently, Germany and Brazil) likely to open their markets this year, the signs are that many more global stakeholders in the healthcare sector may be able to profit from the trend.



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