

CLINICS: Japan's Most Popular Telemedicine System



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1. Introduction

Telemedicine can be implemented using electronic communication devices with a video call function. Medical institutions use telemedicine in combination with face-to-face medical care as a way of making medical care more accessible to patients and achieving better outcomes by promoting active patient participation. Online clinics are sometimes referred to as the fourth form of medical care alongside outpatient care, inpatient care, and home visits.

The growth in the popularity of telemedicine in Japan differs from the situation in other countries. It is widely used in the United States, and owes its popularity to its ability to facilitate the flexible selection of optimal treatments with an emphasis on delivering better patient outcomes. It has been particularly popular for key areas such as psychiatry, dermatology and primary care, where patients often require long-term treatment.*1 In China, the use of telemedicine has been increasing since before the coronavirus pandemic due to issues such as the shortage of doctors and lack of accessibility to medical care. For example, a telemedicine service called *Ping An Good Doctor* was launched by Ping An Insurance in 2015, and by 2019 it had over 300 million registered users. In Japan meanwhile, although government restrictions on the provision of telemedicine were lifted in 2015,

■ **Figure 1: Overview of the CLINICS telemedicine system**



only a small fraction of medical institutions have embraced it. Although we may be lagging behind other countries, telemedicine is starting to take off in Japan as a result of efforts to prevent the spread of coronavirus.

2. CLINICS: Japan's most popular telemedicine system

2.1 About the CLINICS system

CLINICS is the most popular telemedicine system in Japan.*2 It supports a wide range of functions, including online appointment bookings, pre-consultation checks, online video consultations, credit card payment processing, delivery of medicines and prescriptions, and support for cooperation with dispensing pharmacies.

Particular features of CLINICS include:

- High usability with an emphasis on on-site operation thanks to the participation of multiple doctors in the development of the system and its ongoing refinement based on actual clinical use
- Support system for medical institutions and patient users involving teams familiar with complicated rules and diverse usage methods
- Compliance with guidelines and proactive approach to security measures

With these features acknowledged, CLINICS has been widely used by clinics and university hospitals throughout Japan since its launch in February 2016. The number of medical institutions using CLINICS passed 2,300 by the end of 2020, and by April 2021, it had played a part in approximately 300,000 medical examinations.

2.2 Recognition and awards

CLINICS has received favorable coverage in national newspapers including the *Nihon Keizai Shimbun*.

- Selected as a top new product among about 20,000 new services
- Received the "Best of the Best" Award at the 2018 Nikkei Superior Products and Services Awards, which recognizes new services

In addition, at the 14th ASPIC IoT/AI/Cloud Awards in 2020, we received the Ministry of Internal Affairs and Communications award (the top award for the service receiving the most outstanding evaluation out of approximately 70 award-winning services) and the overall Grand Prix for the ASP/

*1 Source: 2018 U.S. Telemedicine Industry Benchmark Survey

*2 Source: 2021 Future Prospects for New Markets in IoMT (Internet of Medical Things), Fuji Chimera Research Institute, November 2020

SaaS category specializing in social industry. This is the second consecutive year that we have received this award, following the 2019 Best Social Contribution Award in the ASP/SaaS category specializing in social industry. In FY2020, in addition to its contribution to society, the system was comprehensively evaluated for its rich and beneficial use record, the safety of its services, its utility in addressing new challenges such as improving the medical experience of patients by tying in with the family pharmacy support system, and the active collaboration with industry, government, and academia.

3. Examples of specific diseases for which telemedicine is used

Telemedicine is widely used in the departments shown in Figure 2, especially following the outbreak of the coronavirus pandemic.*³ The specific diseases treated by each of these departments are described below.

3.1 General internal medicine: Lifestyle-related diseases such as diabetes

In general internal medicine, telemedicine is often used for lifestyle-related diseases such as hypertension, type 2 diabetes, and dyslipidemia that require continuous treatment. However, many people with these conditions go untreated or discontinue their treatment due to the burden of hospital visits and lack of subjective symptoms. For example, a survey of people with diabetes*⁴ has revealed that nearly 60% of both males and females in their 40s are either untreated or have discontinued their treatment. The use of telemedicine is increasing because it reduces the burden of visiting the hospital and makes it easier for patients to continue receiving the treatment they need.

3.2 Psychiatry and psychosomatic medicine: Depression, panic disorders, etc.

Telemedicine is used in psychiatry and psychosomatic

medicine to treat conditions such as depression, panic disorder, alcohol-related disorders, and insomnia. In this field, many people discontinue treatment due to the psychological and social hurdles of going to medical institutions, and the difficulty of leaving the house. Telemedicine is used in this field because it makes it easier for patients to continue receiving medical treatment as they can see a doctor in a familiar environment such as their own home.

3.3 Pediatrics: Pediatric asthma and autism

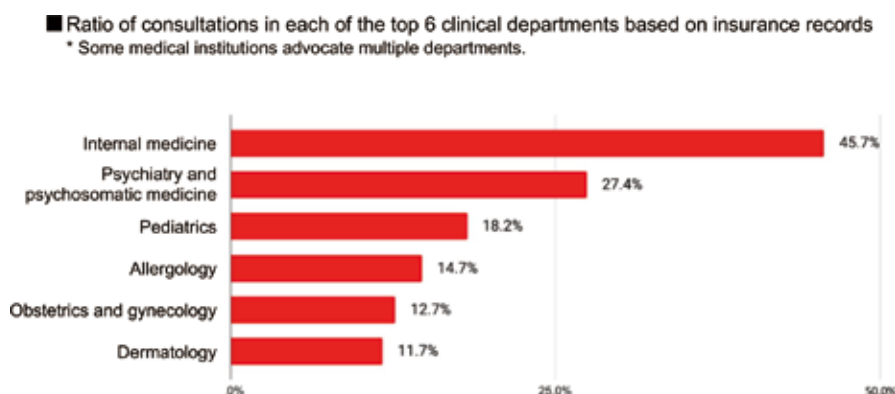
Telemedicine is also used in pediatrics involving the treatment of neurodevelopmental disorders such as autism and ADHD, pediatric asthma, and intractable pediatric diseases. The parents of a young child often find it difficult to take him/her to hospital, especially if they also have other young children. In addition, patients with intractable pediatric diseases often have to travel a long distance for treatment due to the degree of specialization required, and they shoulder a significant burden of arranging travel and lodging for long-term regular visits. For this reason, telemedicine, which allows patients to be seen from their own home or some other location, is considered to be well suited to this field. Another benefit of online consultation is that it provides doctors with access to information such as the child's home environment that is not available when people visit them in person.

3.4 Allergic diseases: Pollinosis, atopic dermatitis, etc.

Many allergic diseases are compatible with telemedicine, as the patients are often young and have stable symptoms. Telemedicine is used for many allergic diseases such as asthma, pollinosis and atopic dermatitis.

It is also used in the field of obstetrics and gynecology for explaining the results of fertility tests and for conditions such as dysmenorrhea that require regular visits. In this way, telemedicine is used in a wide range of medical departments, and can be combined with face-to-face care in various ways according to the

■ Figure 2: Breakdown of CLINICS medical examinations by clinical department (based on insurance records)



*3 Medley Inc. survey (June 2020)

*4 Source: 2012 National Health and Nutrition Survey, Ministry of Health, Labor and Welfare

needs of patients and the strengths of medical institutions.

4. Specialist online second opinions and coronavirus outpatient clinics

4.1 Online second opinions

CLINICS is also used by medical specialists as a means of providing second opinions in their specific fields. It allows patients and their families to connect online with specialists via personal computers and smartphones from anywhere in the country, and is therefore expected to alleviate the burden of traveling when receiving a second opinion. The use of CLINICS is currently spreading in university hospitals and core hospitals nationwide. At the University of Tokyo Hospital, this system is now being used to provide online second opinions among 26 clinical departments. CLINICS is also being used to provide online second opinions in various fields such as epilepsy and lung transplantation at Tohoku University Hospital, and heart and aortic diseases at Kurashiki Central Hospital.

Figure 3: Some of the medical institutions that use CLINICS to provide online second opinions

Medical institutions offering online second opinions (partial excerpt) *As of December 2020

Region	Name of medical institution	Target clinical department
Tohoku	Tohoku University Hospital	Department of epileptology Other departments
Kanto	Jichi Medical University Hospital	Department of neurosurgery (Epileptology)
	The University of Tokyo Hospital	26 clinical departments
	Keio University Hospital	Department of psychiatry & neurology
Chubu	Seirei Hamamatsu General Hospital	Epileptology center
	Fujita Health University Hospital	17 clinical departments
Kansai	Kindai University Hospital	27 clinical departments
	University Hospital, Kyoto Prefectural University of Medicine	Department of psychiatry and psychosomatic medicine
Chugoku & Shikoku	Kurashiki Central Hospital	Department of cardiovascular surgery
	Hiroshima University Hospital	Epileptology center
Kyushu	Kyushu University Hospital	Department of psychiatry & neurology
	Kumamoto University Hospital	Department of cardiovascular surgery

4.2 Online Fever Outpatient Clinics

During the current pandemic, CLINICS is also being used to operate “Online Fever Outpatient Clinics” so that an initial treatment can be provided without coming into contact with patients with cold-related symptoms including fever.

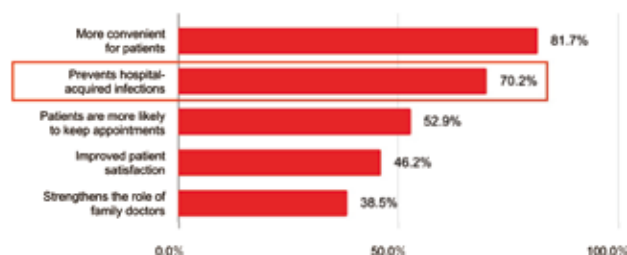
The pandemic has led to deregulation regarding the provision of telemedicine. According to a communique from the Ministry of Health, Labor and Welfare on April 10, 2020, the provision of medical care via telephones and other electronic communication equipment has been sanctioned on a time-limited basis without restrictions of facility requirements or diseases. In fact, as shown in Figure 4, more than 70% of medical institutions feel that telemedicine is an effective way of preventing hospital-acquired infections during the coronavirus pandemic.

Last winter, the system was also used as an Online Fever Outpatient Clinic with the main purpose of dividing the flow of

patients with fever and/or cold symptoms. This makes it possible for medical institutions to provide patients for whom SARS-CoV2 infection cannot be ruled out with initial treatment without coming into direct contact with them.

Figure 4: Some of the medical institutions that use CLINICS to provide online second opinions

What do you feel are the most effective aspects of telemedicine? Select all that apply. (Multiple selection, n = 104; the top 5 most popular choices are shown.)



5. Active collaboration with industry, government and academia

5.1 Telemedicine demonstration project in Yonaguni

During the project, CLINICS was used to provide telemedicine for all the inhabitants of Yonaguni island in Okinawa prefecture.

The island’s only medical institution is the chronically understaffed Yonaguni town clinic, where a single doctor has to provide care to approximately 1,700 islanders (about 700 patients per month). If any medical personnel become infected with SARS-COV-2 under these circumstances, it will become impossible to provide the medical care required by the islanders. It was also found that patients tended to refrain from seeking medical attention due to anxiety about the risk of infection. Yonaguni town and its medical clinic therefore sought to maintain the island’s medical system and address the issue of islanders who refrain from visiting the doctor by building a system whereby patients could receive online medical care via CLINICS if they developed a fever.

5.2 ORBIS and Dai-ichi Life use CLINICS to address menstruation issues

Although there is data showing that 45% of women experience menstrual problems that they are unable to cope with successfully^{*5}, they tend not to have these problems treated for various reasons, such as assessing their own symptoms to be not sufficiently serious, being unable to find the time to visit a hospital, or being hesitant to visit to a gynecologist. There is also data showing that contraceptive pills are only used by 2.9% of Japanese women, which is much lower than the average rate of 16.5% in developed countries^{*6}. One reason for this disparity is thought to be a lack of proper knowledge about non-contraceptive uses of the pill, which is incorrectly regarded as having no other purpose besides birth control. Therefore, as part of measures to

*5 Source: 2018 Survey of Health Promotion for Working Women, Health and Global Policy Institute
*6 Source: Contraceptive Use by Method 2019, United Nation

support the active participation of female employees, CLINICS is being increasingly used by businesses in order to raise awareness of the correct facts about menstruation and contraceptive pills, and to alleviate the burden of female workers seeking medical attention. ORBIS Inc. has started using this system to target approximately 1,000 female employees at its head office and shops, and the Dai-ichi Life Insurance Company, Ltd. has started using it to target about 2,000 female employees working in the Tokyo metropolitan area.

5.3 Free online mental health consultation for pregnant and postpartum women

In partnership with the Saitama Obstetrics & Gynecology Association, Medley, Inc. is utilizing CLINICS as a means of providing care and free online consultation to expectant and nursing mothers with regard to SARS-COV-2. Since May 2020, this service has been operating at seven medical institutions in Saitama prefecture, including Saitama Medical University Hospital. This initiative was started not only because of the possibility that pregnant and postpartum women were not being provided with adequate mental health care during the coronavirus pandemic, but also because they harbored strong feelings of anxiety regarding pregnancy, childbirth and childcare, and because of the limited availability of medical staff familiar with mental health needs in the field of obstetrics and gynecology.

6. Online medication guidance and electronic prescription initiatives

6.1 Family pharmacy support system that facilitates online medication guidance

In response to rules allowing the provision of online medication guidance from September 2020, Medley Inc. has launched a family pharmacy support system called *Pharms*. This system supports functions such as online medication

guidance, online prescription requests, and cashless payments. By cooperating with the CLINICS telemedicine system, this made it possible for patients to enjoy a complete online medical experience from online treatment to online medication guidance via a single smartphone app. As of the end of March 2021, this system has so far been introduced at more than 3,800 pharmacies, including every branch of pharmacy chain companies such as Qol Holdings Co., Ltd., Kraft Co., Tanpopo Pharmacy Co., and Nihon Chouzai Co., Ltd.

6.2 Electronic prescription development

Medley has also developed an electronic prescription management system based on the FHIR, next-generation medical information standard, for a project entrusted by the Ministry of Health, Labor and Welfare to demonstrate the provision of a full-scale electronic prescription service. The system, which ran from 2018 to 2019, enabled the examination of specific mechanisms to facilitate the implementation of electronic prescriptions.

7. Conclusion

The government and other stakeholders are engaged in diverse discussions related to telemedicine. At a meeting of the Regulatory Reform Promotion Council in December 2020, Prime Minister Suga declared his intention to extend the existing exceptional measures permitting the provision of telemedicine and online medication guidance, and to ensure that there would be no reduction of standards compared to what is currently available. For this reason, the future design of these services is being closely watched.

At Medley Inc., we aim to improve the provision of medical care for both medical institutions and patients by making use of the know-how accumulated through over 300,000 medical examinations.

■ Figure 5: A “one-stop” online medical experience

