

Expansion of Telemedicine in the Wake of the COVID-19 Pandemic

Seigo Hara
CEO
MICIN, Inc.



Yoko Kiriya
RA Specialist
MICIN, Inc.



In September 2020, with the resignation of former Prime Minister Shinzo Abe, he was succeeded by Cabinet Minister Yoshihide Suga. One of Cabinet Minister Suga's platform policies was to make telemedicine permanent, and with considerable discussion among experts in the field, a cabinet decision in June 2021 made telemedicine a permanent policy in Japan beginning in FY 2022. The demand for telemedicine care increased with the spread of the COVID-19 pandemic, so virtual clinics are finally taking shape and systems are getting organized. Here, we describe how telemedicine has developed since before the COVID-19 pandemic.

1. Telemedicine care before the COVID-19 pandemic

Telemedicine care is a form of remote medicine that gradually began spreading throughout Japan in around 2015. In 2018, remuneration for clinical work was reformed; establishing new fees for telemedicine care and setting guidelines regarding appropriate

operation of online care (Telemedicine care guidelines). However, although this was an opportunity to establish systems for telemedicine care, the conditions were severely limited (Table 1), and did not lead to significant spread of telemedicine care.

According to documented statistics*1 of actual medical and clinical behavior in society from an investigation in June 2018, fees for telemedicine care were charged a total of 65 times, 15 times for telemedicine treatment, and 4 times for online home management, so it was not even one millionth of the number of claims for medical services per month: approximately 100 million. Examining results over time, the trend is not increasing*2, and there continue to be almost no insured telemedicine treatments. There are several possible reasons for this, but the four major issues are summarized in Table 1. They are: (1) constraints on medical conditions covered, (2) low profitability for insured treatment, (3) strict conditions on provision of services, and (4) guidance for medications can only be given in-person.

■ Table 1: Systematic regulations for treatment under health insurance and effects on clinical work

		System regulation	Effect on clinical work
Treatment remuneration	Constraints on conditions covered	<ul style="list-style-type: none"> Medical conditions covered by insurance are limited because the scope of management fees that can be charged is fixed. 	<ul style="list-style-type: none"> Treatment areas such as dermatology and psychiatry could not be performed online before clinical remuneration regulations were reformed.
	Low profitability	<ul style="list-style-type: none"> Billable points are more than 100 points (1000 yen) less than in-person consultations, so practicing online decreases revenue for a medical institution. 	<ul style="list-style-type: none"> Performing online medicine increases load on a medical institution, requiring IT device set-up, writing treatment plans, etc., but revenue decreases relative to in-person treatment.
	Strict conditions on practice	<ul style="list-style-type: none"> A treatment plan is required In-person first consultation is required 	<ul style="list-style-type: none"> Hurdles to building a system are high
Medication guidance		<ul style="list-style-type: none"> For non-hospital prescriptions, patient must take the prescription to a pharmacy in-person Original prescription is needed for dispensing 	<ul style="list-style-type: none"> Even though a virtual clinic was used, patients must go to the pharmacist themselves, to get prescriptions, so the burden on patients is not decreased.

*1 Central Social Insurance Medical Council General Meeting Document (Sept. 2019), "Calculation of fees, etc. after FY 2018 medical fee reforms"
 *2 Central Social Insurance Medical Council General Meeting Document (Nov. 2019), "Regarding online medical management fees."

Table 2: Changes in virtual clinics due to temporary mitigation measures

	Before temporary mitigation	After temporary mitigation
Treatment remuneration	Constraints on conditions covered <ul style="list-style-type: none"> Medical conditions covered by insurance are limited because the scope of management fees that can be charged is fixed. 	<ul style="list-style-type: none"> Online treatment can be done at the physician's discretion, not limited by the ailment
	Low profitability <ul style="list-style-type: none"> Billable points are more than 100 points (1000 yen) less than in-person consultations, so practicing online decreases revenue for a medical institution. 	<ul style="list-style-type: none"> For initial examinations, more points can be billed (288 points for in-person, 214 points for online examinations) Higher fees can be billed than for repeat examinations
	Strict conditions on practice <ul style="list-style-type: none"> A treatment plan is required In-person first consultation is required 	<ul style="list-style-type: none"> Treatment plan estimate not necessary Online treatment possible from first examination
Medication guidance	<ul style="list-style-type: none"> For non-hospital prescriptions, patient must take the prescription to a pharmacy in person Original prescription is needed for dispensing 	<ul style="list-style-type: none"> On-line guidance can also be given for non-hospital prescriptions Prescriptions can be filled by FAX

2. Changing conditions due to expansion of the COVID-19 pandemic

However, with the expansion of the COVID-19 pandemic, these conditions changed completely. In February, 2020, a specialist session of the government issued a declaration that telemedicine care would be used as a measure to control further spread, the Ministry of Health, Labour and Welfare issued successive notices regarding telemedicine care, and temporary measures were taken to relax regulations. The main changes are summarized in Table 2. The change that attracted the most attention in the media was lifting the ban on performing initial examinations online, but perhaps more important was the relaxation of restrictions on the medical conditions covered, which were extremely limiting previously.

MICIN Inc. has been providing a telemedicine care service called “curon” since 2016. In March 2020, the environment changed, and approximately 5,000 medical institutions are currently using our product (as of February, 2021). The number of examinations being done with the system also increased by more than a factor of ten at that time. Considering that in December, 2019, the number of medical facilities using the system was approximately 1,800, it is easy to imagine that the needs of both medical facilities and patients changed suddenly with the spread of the pandemic. Other providers of telemedicine care systems are also experiencing this increase in users, and according to Ministry of Health, Labour and Welfare documents*³, over 16,000 medical facilities were performing telephone or online examinations as of August, 2020. New enterprises also continue to enter the market providing telemedicine care systems, and

considering current conditions in society, we expect the number of medical facilities using telemedicine care systems will continue to increase. On the other hand, the report from a Ministry of Health, Labour and Welfare review meeting on May 31, 2021, indicated that the number of medical facilities using such systems had begun to level off*⁴. Based on the current systems and technology platforms, telemedicine care platforms and use cases are beginning to stabilize to some extent.

In the next sections, we introduce the “curon” virtual clinic service that we provide, and also a new service called “curon medication support,” providing online guidance for taking medications.

3. System provided by MICIN

(1) The “curon” telemedicine care service

MICIN's telemedicine care service, called “curon,” has been providing comprehensive, end-to-end systems mainly to medical clinics since 2016, including appointments, medical history taking, video examinations, billing, payment and prescription filling and delivery. The virtual clinic systems from other providers each have their strengths, but a major difference between curon and systems from other providers is that installation and operation is free-of-charge for medical facilities, and patients are required to pay fee (330 yen tax incl.) to use the application. We considered that one of the major benefits of telemedicine care is improving access to medical care for patients, so we decided to collect revenue from the patients, who receive this benefit, rather than from the medical facility. As of February, 2021, over 5,000 medical facilities had introduced our system.

*3 Ministry of Health, Labour and Welfare, 10th Review of Appropriate Online Medical Care Operation document, “Trends in medical facilities (Overall, initial examinations)” (August, 2020)

*4 Ministry of Health, Labour and Welfare, 15th Review of Appropriate Online Medical Care Operation document, “Numbers of medical facilities (May, 2021)”

(2) curon medication support

Following the telemedicine care system that has been established since 2018, there was a plan to lift restrictions on online medication guidance in September, 2020, according to revisions made in November 2019 to the Pharma and Medical Devices Act. However, with the spread of the COVID-19 pandemic, the Ministry of Health, Labour and Welfare issued temporary special mitigation measures, which included lifting this ban early and giving approval for medical facilities to send prescriptions to pharmacies by FAX. We had been developing our online medication guidance service with the intention of releasing it in September, 2020, but with this mitigation measure, we developed and began providing additional functions in our curon telemedicine care service, to upload prescription data and to send prescriptions to pharmacies. Thus, before launching our online medication guidance service, we were able to equip curon with functions to send prescriptions to pharmacies by FAX. Since the number of patients requested to stay home was expected to increase greatly, our development team worked day-and-night, and was able to develop and publish the new features in only three days from when the measures were announced.

Later, α and β versions of our online medication guidance service for pharmacies (“curon Medication Support”) were released in May and July respectively, and the first official version was released in August. The process for curon Medication Support is shown in Figure 1. We had determined to have curon Medication Support installed and in use at more than 2,500 pharmacies by the end of 2020, and we continue to work to have it used in even more pharmacies. Note that curon Medication Support is not limited to

curon and can be used with other telemedicine care systems.

4. Telemedicine care and information security

We are sometimes asked whether using a comprehensive telemedicine care system like the one we provide is necessary when offering telemedicine care. Not necessarily, and use of general-purpose video conferencing systems is not prohibited. However, information security must be considered when doing so, and medical facilities performing online examinations have a duty to take adequate measures. The differences between using a comprehensive telemedicine care system and system using general-purpose services are summarized in Table 3.

Here, taking adequate measures to guarantee security means that the organization must create systems and operate following the guidelines for telemedicine care issued by the Ministry of Health, Labour and Welfare. A comprehensive telemedicine care system like the one we provide has already been designed and built confirming to these guidelines (Figure 2), but if general purpose services are used, the medical facility must prepare the environment and operate with consideration for security to ensure that, for example, video calls are not intercepted, and information regarding ailments or prescriptions is not leaked, falsified or destroyed.

There were quite a few medical facilities that began providing telemedicine care using general-purpose services, which were immediately available during the first wave of the COVID-19 pandemic, but considering the above issues, we expect that many of these will migrate to a comprehensive telemedicine care system in the future.

Figure 1: Medication support process with curon

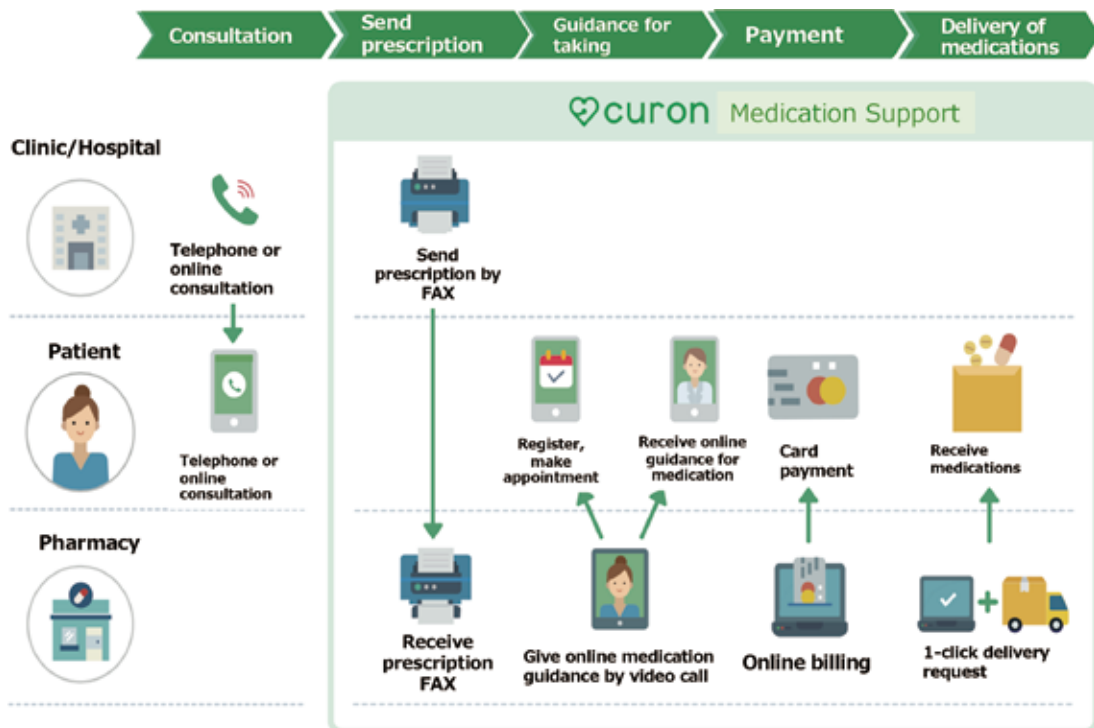
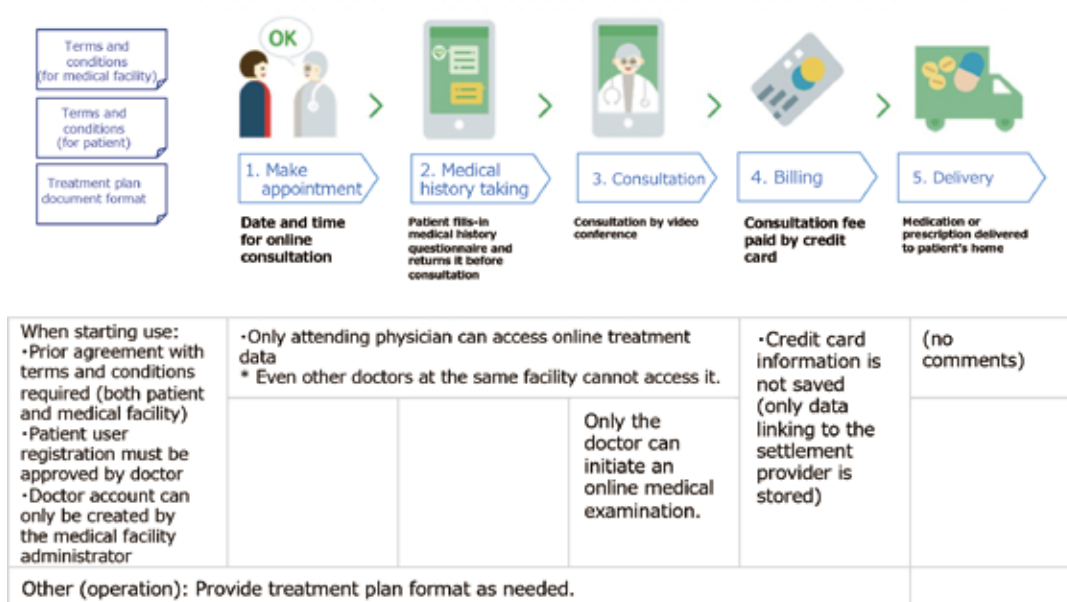


Table 3: Comparing comprehensive online medical care systems with general-purpose systems

	Comprehensive medical care system	System using general-purpose services
Data communication method	<ul style="list-style-type: none"> • Uses video conferencing service recommended by each specialist 	<ul style="list-style-type: none"> • Medical facility chooses from several general purpose services
Benefits	<ul style="list-style-type: none"> • Both doctors and patients can be authenticated in the system • Includes invoicing tasks • Includes appointment management • Professional support 	<ul style="list-style-type: none"> • Low-cost or free of charge • Easy to start
Concerns	<ul style="list-style-type: none"> • Some services are not free • Contracts and other preparation may be needed • Cost and services may differ depending on the system 	<ul style="list-style-type: none"> • Medical facility itself must guarantee information security • Medical facility must manage appointments • A mechanism to check identities of doctor and patient is necessary • Medical facility must build its own treatment process based on guidelines • Medical facility must invoice for prescriptions on its own

Figure 2: Use of curon with system design conforming to guidelines



5. Future of telemedicine care

Use of telemedicine care began to spread, prompted by the COVID-19 pandemic, but there is discussion of making it permanent, so we expect it will become established. However, it is still difficult to escape the image of “medical examination by video conference.” This is due to technical issues with online examinations, which do not allow doctors to obtain all of the information that is available in a conventional, face-to-face examination, using all five senses. However, there have been various developments in digital health in the past few years, and in the future, we expect developments integrating telemedicine care with compatible digital therapeutics (DTx). We are already working with pharmaceutical enterprises to establish patient support programs that aim to improve treatment continuity and adherence for patients, in our efforts to increase convenience for

patients and add new value to telemedicine care.

DTx is a field that is currently seeing vigorous development, both domestically and internationally. In the USA, many products are entering the market, starting with the Bluestar smartphone diabetes treatment application from Welldoc Inc., which was approved by the FDA in 2010. Japan is several years behind some other countries, but in August, 2020, CureApp SC, from CureApp Co. Inc., was the first digital treatment device to receive Pharmaceutical Affairs Act approval in Japan, and in November it attained insurance coverage. We expect various other products to be developed in Japan in the future.

With progress in system design to make telemedicine treatment permanent, we look forward to seeing it take root as one form of medical treatment, and something that can contribute to society as the technology develops in the future.