

# The Current Status of COVID-19 Dialysis Nursing in Japan: Includes “Listening and Writing”

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## ABSTRACT

*COVID-19 has various adverse effects in patients with chronic kidney disease, but these effects have not been well documented in Japan. This paper aims to clarify the current situation, challenges, and psychological support for dialysis patients and dialysis nursing in Japan.*

*The fatality rate is currently over 10 times higher in dialysis patients than in the whole population in Japan. According to the Ministry of Health, Labor and Welfare, an oxygen saturation  $\leq 93\%$  is considered severe or moderate II and an indication for hospitalization. However, inpatient facilities are often full when there are many infected patients, and each dialysis facility handles the situation.*

*For anxious dialysis patients, "listening and writing," in which the nurse creates the patient's personal history by listening to the patient's story and writing it in a booklet, is an effective psychological support. Dialysis patients who received "listening and writing" from nurses showed recovery of resilience. The writing session may promote self-awareness among patients exhausted by COVID-19 and encourage them as they try their best to live their lives. Thus, we anticipate that their resilience will be enhanced.*

## Keywords

Chronic kidney disease (CKD), COVID-19, Dialysis patients in Japan, "listening and writing".

## Introduction

COVID-19 affects patients with many underlying diseases. This is likely to be no exception for patients with chronic kidney disease (CKD).

In 2017, a total of 850 million people were estimated to be living with CKD, which was twice the estimated prevalence of diabetes worldwide and over 20 times the estimated global prevalence of HIV or AIDS [1,2]. As CKD progresses from its early stages to kidney failure (defined as an estimated glomerular filtration rate (eGFR)  $< 15 \text{ ml/min/1.73 m}^2$  or treatment by dialysis, morbidity, mortality and health-care costs rise rapidly and life expectancy is

dramatically reduced unless kidney replacement therapy (KRT) is initiated [3]. In 2017, estimates indicated that 3.9 million persons with kidney failure were treated with KRT globally [1]; notably, an approximately equivalent number of patients with kidney failure did not receive KRT [2]. Hemodialysis (HD) is the commonest form of KRT in the world, accounting for approximately 69% of all KRT and 89% of all dialysis [3,4].

The number of patients receiving KRT in Japan has been increasing year by year, with a reported 347,671 patients at the end of 2020 [5]. Among them, hemodialysis patients including hemodiafiltration (HDF) accounted for 96.4%, and most patients are receiving hemodialysis. Therefore, the impact of COVID-19 on hemodialysis patients in Japan is likely to be significant, but the issues and support for dialysis care in Japan are not clear.

## Objective

Therefore, in order to clarify the problem of COVID-19 and its countermeasures in dialysis nursing in Japan, this paper clarifies the current situation, issues, and psychological support for dialysis patients and dialysis nursing in Japan.

## Chronological progress of COVID-19 relative to dialysis treatments in Japan

First, we will review chronological progress of COVID-19 in Japan.

<2020>

- January 16: Japan's first case of a novel coronavirus was confirmed on this date, with the Japanese Ministry of Health, Labor.
- Jan. 30: World Health Organization declares global emergency.
- March 24: Japanese Government announced an agreement with the International Olympic Committee to postpone the 2020 Summer Olympics in Tokyo to 2021.
- April 5: Deaths from COVID-19 in Japan top 100.
- April 16: Japanese Government expanded the state of emergency nationwide.
- Dec. 22: Coronavirus deaths in Japan top 3,000.

<2021>

- January 7: Japanese Government declares second state of emergency for Tokyo and three neighboring prefectures effective the following day through Feb. 7.
- February 17: Start of vaccination of healthcare workers
- April 23: Japanese Government declares third state of emergency in Tokyo and three western prefectures of Osaka, Kyoto, and Hyogo effective April 25 through May 11.
- May 24: Start of vaccination of the elderly

<2022>

- July 7: The Governor of Tokyo said that COVID-19 appears to be in its seventh wave.
- September 16: The government plans to lift an entry ban on individual tourists around October, significantly relaxing border controls that were imposed to prevent the spread of the novel coronavirus.
- September 26 : Based on the revision of the Enforcement Regulations of the Infectious Disease Control Law in Japan, only persons 65 years of age or older and those requiring hospitalization were eligible for COVID-19 outbreak notification. Accordingly, the "Number of newly confirmed cases" is the number of patients reported by medical institutions and the number of registered positive cases (positive by self-test).

The above is the chronological progress of COVID-19 in Japan.

Globally, the Japanese government may have restricted Japanese nationals from traveling abroad more strictly than other countries. As of January 2023, no country restricts Japanese travel abroad, and Japanese are now free to travel abroad more easily. It has also become easier for foreign tourists to enter Japan.

Here is the introduction to chronological progress of COVID-19 relative to dialysis treatments in Japan.

<2020>

- February 4; the Japanese Association of Dialysis Physicians announced its "Response to COVID-19-related pneumonia at dialysis facilities".
- February 28: the Japanese Association of Dialysis Physicians established a working group on COVID-19 infection control.
- Although the dialysis medical community had taken various preventive measures, the first COVID-19 infection in a dialysis patient in Japan was diagnosed on March 1.
- This case was reported 43 days after the first COVID-19 case in Japan, which was confirmed on January 16.
- March 27: The Japanese Association of Dialysis Physicians and the Japanese Society for Dialysis Therapy jointly established COVID-19 Task Force Committee.
- May 12: The Japanese Association of Dialysis Physicians, the Japanese Society for Dialysis Therapy, and the Japanese Society of Nephrology jointly established COVID-19 Task Force Committee. Various infection control measures are still being implemented.

"Response to COVID-19-related pneumonia at dialysis facilities" was announced The Japanese Association of Dialysis Physicians on February 4<sup>th</sup>. Since WHO declared COVID-19 a global crisis on January 30, 2020, the academic society issued an early response by announcing the countermeasures five days later.

## Current Status of COVID-19 among Japanese Dialysis Patients

First, we will introduce trends in Japan as a whole. As of October 7<sup>th</sup>, 2022, number of newly confirmed cases per 100,000 population are 23.3 cases in Japan (Figure 1). Trends in the number of severe cases are 150 in Japan (Figure 2). As a rule, severe cases are defined as meeting one of the following conditions: 1) being connected to a mechanical ventilator, 2) being on ECMO, or 3) being treated in the ICU or a similar facility. However, some jurisdictions may use other definitions. Airport quarantine cases are not included.

### Number of newly confirmed cases per 100,000 population

Last updated: October 07, 2022



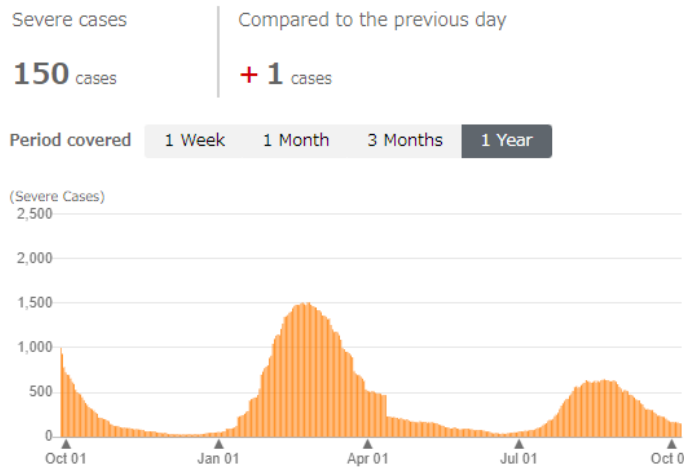
Period covered 1 Week 1 Month 3 Months 1 Year



**Figure 1:** Number of newly confirmed cases per 100,000 population in Japan [6].

## Trends in the number of severe cases

Last updated: October 07, 2022



**Figure 2:** Trends in the number of severe cases in Japan [6].

The following is a comparison of COVID-19 fatality rates between Japan and dialysis patients.

As of December 21st, 2021, cumulative number of infected persons in Japan was 1,714,496, and the cumulative number of deaths was 17,822. Based on these figures, the fatality rate for all people in Japan was 1.0%. As of December 23, 2021, the cumulative number of infected dialysis patients in Japan was 2,676, and the cumulative number of deaths was 423. Thus, the fatality rate for dialysis patients was 15.8%. Unfortunately, the fatality rate of dialysis patients was more than 15 times that of Japan's general population [7]. However, the fatality rate of dialysis patients in the United States at the same time was as high as 24.9% (109/438) [8], so it can be said that Japanese dialysis patients were not the only ones with a high fatality rate. In addition, here is the situation about seven months later. As of July 8, 2022, case fatality rate of COVID-19 comparison between Japan and dialysis patients. The cumulative number of COVID-19 cases in all over Japan is 955,0492, and the cumulative number of deaths is 31,369. Therefore, the incidence rate is 7.52% and the fatality rate is 0.33% [9].

As of July 8, 2022, the data of same date of all over Japan show that the cumulative number of COVID-19 cases among dialysis patients in Japan is 7,061, and the cumulative number of deaths is 572. Therefore, incidence rate of dialysis patients is 2.01% and their fatality rate is 8.1% [10]. Unfortunately, even now, the fatality rate among dialysis patients is 24.5 times higher than that of the entire population of Japan.

However, more than twice as many Japanese dialysis patients aged 65 years or older were vaccinated at an earlier age than the general Japanese population aged 65 years or older. After the second vaccination, the fatality rate among dialysis patients declined to less than one-third [7]. Non-dialysis patients with underlying

medical conditions were vaccinated earlier than those without such conditions.

### COVID-19 Countermeasures in Japanese Dialysis Facilities

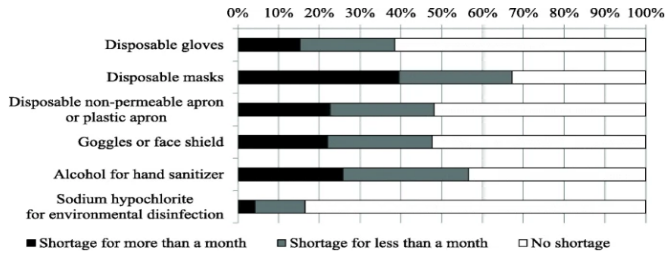
On July 14, 2022, the Ministry of Health, Labour and Welfare in Japan disseminated a document titled "Ensuring an Appropriate Medical Care Provision System for Dialysis Patients in Light of the Omicron Strain Outbreak (Reminder)." [11] According to this notice, an oxygen saturation of 93% or less is considered severe or moderate II and an indication for hospitalization. If the oxygen saturation is between 93% and 96%, the severity is moderate patient and I is hospitalized. If the oxygen saturation is 96% or higher, the severity is asymptomatic or mild; therefore, patients who can stand on their own will be treated at home, and dialysis will be an outpatient treatment. However, during times when there are many infected patients, inpatient facilities are often full, and the reality is that each dialysis facility handles the situation.

Here are the introduction infection prevention measures for patients undergoing hemodialysis during the COVID-19 pandemic in Japan. This is a comparison of pre- and post-pandemic data showing a significant increase in the implementation rate.

This is a survey conducted by Sugawara et al., [12] of dialysis facilities nationwide. The survey was completed by 2,227 dialysis facilities between October 20 and November 16, 2020. This period fell between the second and third waves of the COVID-19 pandemic in Japan. Thus, the comparison of the periods before and after the COVID-19 pandemic revealed a significant increase in the implementation rate of eight infection control measures.

1. Examination of staff's physical conditions (No. 5; before 70.0%, during 93.9%,  $p < 0.001$ )
2. Use of personal protective equipment (PPE), including masks (No. 9; before 87.0%, during 98.2%,  $p < 0.001$ )
3. Disposable, non-permeable gowns or plastic aprons (No. 10; before 58.0%, during 66.1%,  $p < 0.001$ )
4. Goggles or face shields (No. 11; before 51.4%, during 74.0%,  $p < 0.001$ )
5. During initiation and termination of hemodialysis; checking the patient's physical conditions upon entering the dialysis room (No. 14; before 53.8%, during 94.1%,  $p < 0.001$ )
6. Modification of infection measures according to each patient's condition (No. 15; before 71.9%, during 96.1%,  $p < 0.001$ )
7. Bed linen change for each patient (No. 16; before 29.3%, during 34.4%,  $p < 0.001$ ),
8. Disinfection of high frequency contact areas (No. 17; before 52.3%, during 90.1%,  $p < 0.001$ ).

They investigated the duration of shortage of the following PPE during the COVID-19 pandemic (Figure 3). Sugisawa, et al., [12] reported, notably, 67.2% of the facilities reported a shortage of disposable masks. It is 27.7% for less than a month, 39.5% for more than a month.



Distribution of the period of shortage of personal protective equipment. The distribution of the period of shortage of six personal infection-protective equipment and disinfectants in dialysis facilities is shown. The black bar indicates shortage for more than a month, the gray bar for less than a month, and the white bar for no shortage

**Figure 3:** Distribution of the period of shortage of personal protective equipment (PPE) [12].

Alcohol for hand sanitizer was also in short supply in 56.7% of the facilities. It is 30.9% for less than a month, 25.8% for more than a month. There were 222 facilities (10.0%) that experienced a shortage of all the items listed above.

These other measures are being introduced randomly [13]

- Prohibit patients from using changing rooms. This has resulted in some patients coming to the hospital from home in their pajamas.
- Avoid auscultation and just conduct a medical interview.
- Avoid serving meals during dialysis.
- Isolate infected patients in private rooms.
- Implement guideline -based measures.

Although these measures are being taken for dialysis treatments, there is growing concern among patients and medical staffs.

### Psychological Support for Dialysis Patients

COVID-19 continues to show no sign of abating in Japan. Many dialysis patients are frightened about the infection and are striving daily to prevent becoming infected. Therefore, we believe that dialysis patients are very anxious. I would like to introduce one form of psychological support for such patients called “listening and writing.” (Figure 4) I have recently been working on this activity with great enthusiasm.



**Figure 4:** The "listening and writing book" created by the author.

Accordingly, a “storyteller” tells a personal story, and a “listener” transcribes the story into a booklet using the storyteller’s words. In this activity, the nurse becomes the listener, listens to the patient’s story, and writes it down. In other words, the nurse—as a listener—creates a personal history of the patient. Until now, patients who have undergone the listening and writing program have given such statements as, “I feel better now that I’m back to my old self” and “I thought about how to live in the future.” [14] It may be that the writing session will promote self-awareness among patients who are exhausted by COVID-19 and encourage them as they try their best to live their lives. As a result, we anticipate that their resilience will be enhanced.

### Conclusion

In Japan, there are still no clear signs of a post-coronavirus disease world. We do not know what will happen in the future, but we must continue to take measures to prevent infection. We may take basic precautionary measures (wearing a mask, washing hands) to prevent the spread of COVID-19.

The illustration on the left is a legendary monster called Amabie who is said to drive away plagues (Figure 5). We would like to continue to provide nursing care to as many dialysis patients as possible, taking into consideration their psychological conditions, so that they can receive dialysis treatment while maintaining peace of mind.



**Figure 5:** A legendary monster called Amabie [15].

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