

Appendix 1

Research Results on the Vulnerability and Resilience of Care Workers in Japan

1. Interviews with COVID-19 Infection Control Managers

1.1. Methods

Semi-structured interviews were conducted with managers at four facilities.

1.1.1. Interview subjects and periods

- (i) Niigata Prefecture, Social Welfare Corporation A
Type of business: Special care homes for the elderly, short stay, and residential long-term care support business
Occupation: Principal
50s, Male
Interview date: 22 October 2021
- (ii) Saitama Prefecture, Company B
Type of business: Private senior long-term care home
Occupation: Deputy Principal
30s, Female
Interview date: 12 November 2021
- (iii) Fukuoka Prefecture, Social Welfare Corporation C
Type of business: Special care home for the elderly
Occupation: General Manager
Interview date: 23 December 2021
- (iv) Tokyo, Social Welfare Corporation D
Type of business: Special care home for the elderly
Occupation: Chief Operating Officer and General Manager
Interview date: 31 March 2022

1.1.2. Interview questions

- (i) What do you do to take care of yourself to prevent infection by COVID-19?
- (ii) Has the division of roles and tasks at your office or facility changed?
- (iii) If so, how did it change?
- (iv) Have you made any changes or innovations in the way of care or support?
- (v) If so, what changes or innovations did you make?
- (vi) Please tell us about any experiences or difficulties you have had in caring for or supporting others, and any problems or worries you are currently facing.

(vii) What do you think is important to prevent the transmission of COVID-19 in long-term care facilities?

1.1.3. Interview method

Face to face semi-structured interview

1.1.4. Ethical considerations

An ethics review application was filed with Keishin Group, and an ethics review application was also filed with the reporter's university and approval obtained (Reception number: 18749).

Prior to conducting the interviews, a 'request for cooperation in research'—was presented, and signatures on the consent forms were obtained.

1.1.5. Results of interviews with managers

Summary

Table A1.1. Results of Questionnaire to Managers

Question	A	B	C	D
What do you do to take care of yourself to prevent infection by COVID-19?	Thorough physical condition Not to be more informed than necessary Try to forget about work during private time	Not going out Thorough physical condition Stop work when having a fever of 37°C	Thorough physical condition Bathe as soon as getting home Not drinking alcohol	Not going out Thorough physical condition Not eating outside
Has the division of roles and tasks at your office or facility changed? If so, how did it change?	All staff do care work Remove the usual system of separate stove-piped directions and commands	Reviewing the operations Developing and using an iPhone-based staff work management system All staff, including administrative staff, do care work	All staff, including nurses, do care work A task force committee meeting is held twice a month, where nurses and care workers work together to decide on policies.	Originally, there is a risk management office and research institute, so not changed.
Have you made any changes or innovations in the way of care or support? If so, what changes or innovations did you make?	Separate entrances and exits for each day service and residential facility When coming and going, go outside once (not	If infection is suspected, switch to infection control. All residents must not leave their rooms.	Explain the cautions decided by the task force when handing out paycheques to staff. Demonstrate how to handle gowns, etc. in addition to	Negative pressure devices were incorporated into the facility. Zoning devices 'ZENSITSU-KUN' were incorporated into the facility.

Question	A	B	C	D
	through the facility)	Meals are carried to their room by staff. Use disposable dishes. When finished eating, have the food taken to the balcony of each room and cleaned up by staff. Shut out contact.	explaining in words. Put off bathing, etc. and put priority on keeping life.	(Use of technology, introduction of ICT was done before COVID-19.)
Please tell us about any experiences or difficulties you have had in caring for or supporting others, and any problems or worries you are currently facing.	Do not judge by feelings but persuade theoretically	Mental health care <ul style="list-style-type: none"> • Recreational activities • Radio calisthenics • Events online • Fireworks Oral care Dementia patients who cannot brush their teeth rinse with tea.	Mental health care for staff <ul style="list-style-type: none"> • Choosing a daily lunch box • Eating their favourite snacks • Building a culture of acceptance 	Not having any problems in their operations because they had taken measures before the outbreak of the infection. Boredom due to lack of direct communication →present gifts to workers
What do you think is important to prevent the transmission of COVID-19 in long-term care facilities?	Widen perspective Know who to ask	Awareness of all staff members Work environment for immediate reporting	Establish relationships of trust Communication with all staff members Leading staffs to be professionally aware	Think and act on one's own according to the situation Moving the organisation forward by oneself. Never stop doing what you normally do. If you wait for administrative instructions, you will not make it in time.

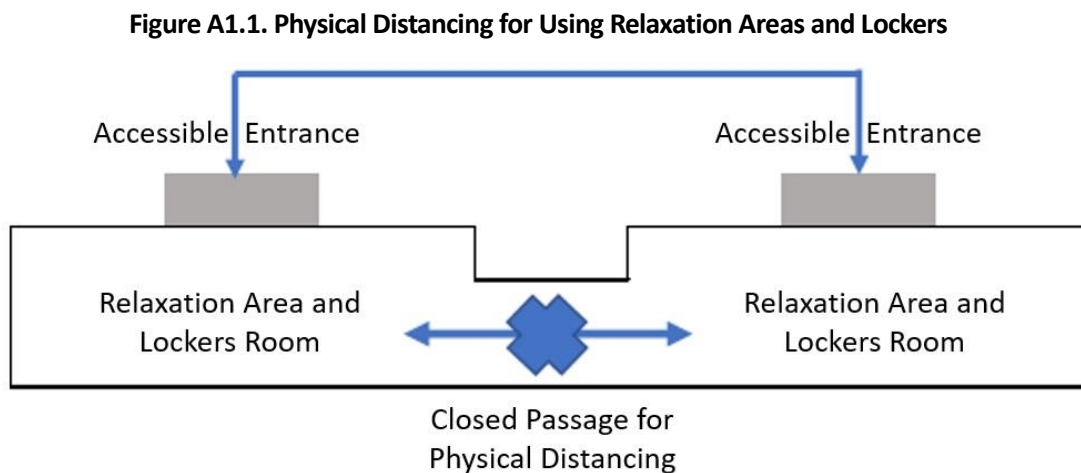
Source: Compiled by author.

Some topics mentioned by each long-term care facility

(i) Niigata Prefecture, Social Welfare Corporation A

There are two entrances and exits, one for the special care home for the elderly and daytime-care facility and another for the short stay. If infected people pass through the facility, the infection will spread. There are 89 clients and 100 staff, and PCR tests are conducted on all persons passing through the facility. Therefore, it was decided that any movement between wings would require the person to exit the facility and then re-enter, without using the internal connecting passageway. During January and February (winter months in Niigata), there were many complaints from the staff. We were able to reply to such emotional statements as 'It's such a shame', 'It's so cold out', 'We have to put on our coats and use our umbrellas just to go out in the snow and come back inside', etc. with persuasive infection prevention information.

Subsequently, there was agreement that the relaxation areas and lockers, which had previously only been on one side, should be installed on both sides, thus reducing the amount of back-and-forth traffic, and that the relaxation facilities should be improved.



Source: Compiled by author.

At one point there was some discrepancy in opinion and perception between 'nursing staff who know very well how the slightest difference can mean life or death' and long-term care staff who are 'responsible for patients' happiness', and the director who came down on the side of prioritising infection control and was able to prevent the spread of infection by making the opinion of the nursing staff the instructions for the entire organisation.

(ii) Saitama Prefecture, Company B

The company developed an iPhone application, and each employee started doing their work on iPhones. Everyone's work is scheduled by the app and displayed on the iPhone such as 'whose mobility care is to be done at what time'. When an employee finishes the work, they just need to tap a button onsite to register 'job completed'. In order to promote self-reliance support, the purpose of the initiative is to provide the necessary services to those who cannot speak for themselves at the

time when they (probably) need assistance. Furthermore, by linking with long-term care record systems, we were able to reduce the burden of recording work. It may be said that providing visibility to long-term care work can lead to the optimisation of service content and the discovery of problems on-site.

(iii) Fukuoka Prefecture, Social Welfare Corporation C

Since the company had already established a workplace culture in which nurses also provide care on a daily basis, there was no resistance to having all employees (who could come to work) provide care after the outbreak of COVID-19.

First, it was discovered that a staff member had become infected. This was followed by infections amongst three clients.

At that time, public health centres were trying to reduce the number of PCR tests as much as possible, but we requested testing for everyone (130 persons in 2 days). The infected staff member usually travelled to work by train, but 2 or 3 days before had ridden in a car with a friend, so it was surmised that the infection had originated there. However, the friend tested negative, so the route of infection could not be determined. The three clients were asymptomatic, so if their infections had not been detected by the PCR testing, there is a high possibility that a large cluster infection could have occurred.

This experience highlighted the importance of thinking for oneself and taking the initiative, rather than simply following the instructions of the authorities and public health centres.

In addition, since we have always had an open workplace culture, even trivial disputes between employees are heard by their managers. By sharing information within the office and deciding whose role it is to deal with which issues, trouble has been avoided. From the point of view of stress care for the employees, we have set aside time for the staff to choose their lunch boxes so that they can relax by creating time to talk about things other than work. Since it is stressful for technical interns to stay overnight, these technical interns from Myanmar were asked to help prepare meals to help take their minds off work.

Regarding the improvement of knowledge about infection prevention, we try to hand out pay slips directly to the staff, and at that time provide both printed and verbal information.

In addition, we have posted information using diagrams and illustrations so that the non-Japanese technical interns can understand.

(iv) Tokyo, Social Welfare Corporation D

Even before the emergence of COVID-19, we had a risk management countermeasure team and laboratories, with virus monitoring being carried out from an early stage, and negative pressure ventilation devices and zoning devices introduced. Because we had already had systems in place to help out if something happened, there was no need for us to change the divisions of duties or roles because of COVID-19. In addition, we have been leveraging technology by the introduction of sensing equipment and care robots. These measures allowed us to spend more time with the facility clients. The implementation of ICT does not mean that long-term care will lose its human touch, but rather that more time can be spent with the clients.

Regarding COVID-19, zoning and re-allocation had been decided before there were any cases of infected people, and we were able to switch as soon as there were any close contact cases. When actual cases of infection appeared, we immediately implemented zoning and other measures, and calmly brought the infection to an end.

Findings with managers of long-term care facilities

- The facility managers took every possible measure to manage their physical condition and restricted their activities, such as not going out or eating out. This is because caregivers are exposed to the risk of infection not only in the workplace but also in their private lives (when commuting, returning home, and in daily life at home), and are required as professionals to perform self-management. This is discussed in detail in the knowledge, attitudes, and practices (KAP) survey in Section 2.
- Most facilities switched the division of roles and duties of their professional and other staff to an emergency system. All staff, including nursing staff and clerical staff, are involved in caregiving, thereby compensating for the number of caregiving staff self-isolating at home. In these circumstances, the normal chain of command has been abolished, with responsibilities assigned to personnel according to the situation, and the system designed so that it is clear who to ask about what.
- In the provision of long-term care, we pay particular attention to zoning. By separating entrances and exits, having dishes placed on verandas after meals to avoid contact with clients, and the introduction of zoning devices and negative pressure devices, etc. we have been able to thoroughly prevent contact between infected persons and close contacts and other clients and staff.
- All of our facilities are paying careful attention to the mental wellbeing of our staff. They provide recreational opportunities as well as confectionary and small gifts to prevent the decline of morale.
- As the manager in charge of a facility, I try to build a relationship of trust with the employees and staff, and to think and act on my own according to the situation. If we wait for instructions from the government or public health centres, our response will be delayed and may not be in time to deal with the situation. To that end, it is important to broaden one's horizons on a daily basis and know who to ask when one is in difficulty.

2. KAP Survey in Japan

2.1. Methods

2.1.1. Survey subjects

Employees and staff of the interview subjects (ii), (iii) and (iv) (facilities) of Section 1, above.
(breakdown shown in results)

2.1.2. Survey period

November 2021 till end June 2022

Staff were asked to participate in the survey at the time of the interviews in Section 1, above.

2.1.3. Survey items

Survey questions were set using the checklist of the Ministry of Health, Labour and Welfare.

2.1.4. Survey method

For facilities (ii) and (iii): self-administered questionnaire survey (responses collected by mail)

For facility (iv): responses by entry into Google form

Check entered for 'I know', 'I do', and 'applicable'.

2.1.5. Ethical considerations

An ethics application was filed with Keishin Group, and an ethics application was also filed with the reporter's university, and approval obtained (Reception number: 18749).

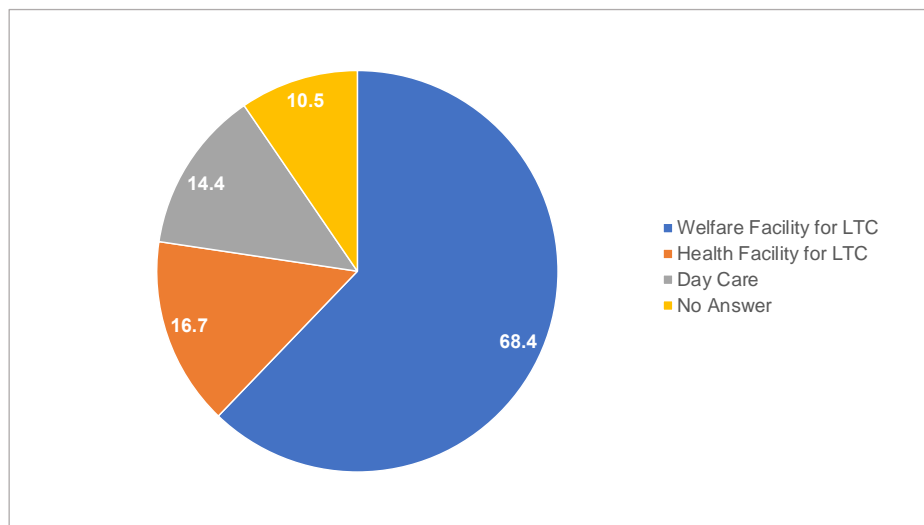
A 'Request for cooperation in research' was presented, and responses obtained on an opt-out basis.

2.1.6. Subjects of KAP Survey of Care Workers in Japan

A total of 114 responses was obtained.

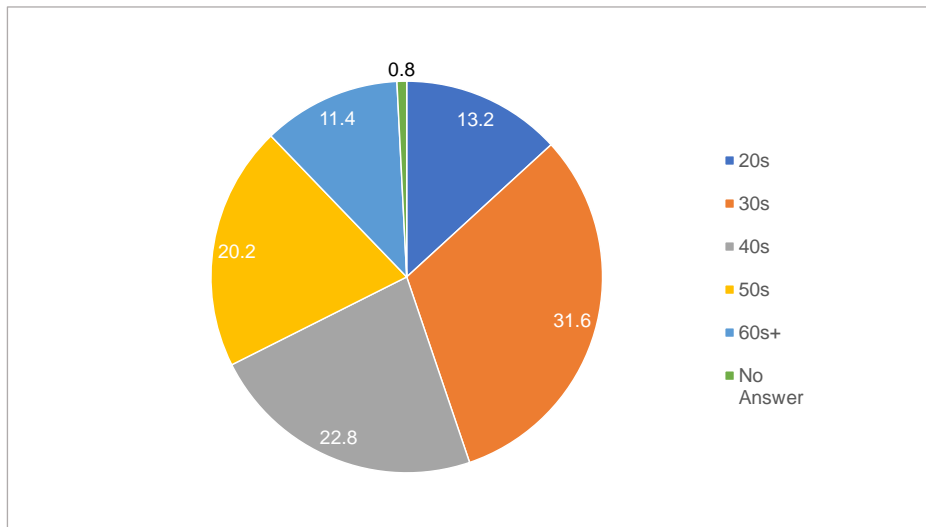
2.1.7 Attributes of Respondents

Figure A1.2. What Type of Business do you Serve?



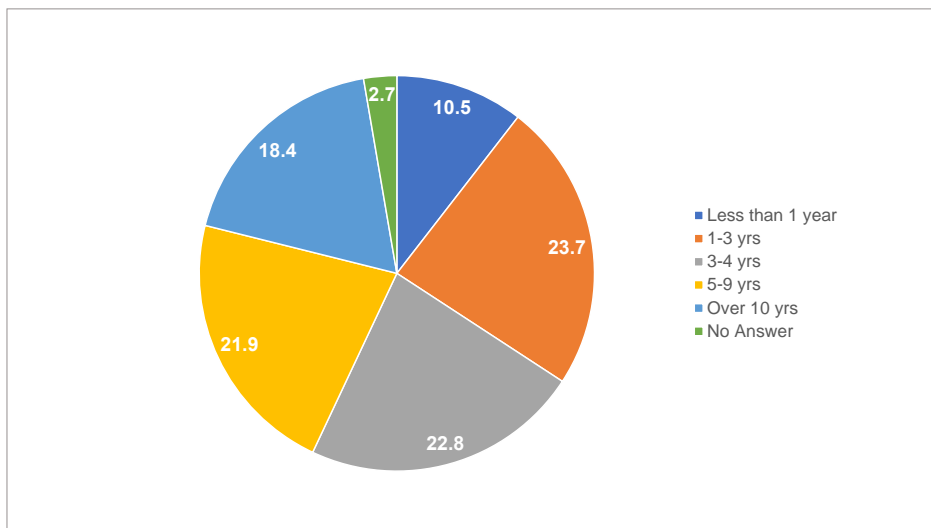
Source: Compiled by author.

Figure A1.3. What is your Age?



Source: Compiled by author.

Figure A1.4. What is your Tenure?



Source: Compiled by author.

2.2. Results of KAP Survey

2.2.1. Knowledge of Care Workers in Japan

Table A1.2. Knowledge of Care Workers in Japan

Do you know the following about COVID-19 ?	Yes	No
I know that infection with COVID-19 causes fever, respiratory symptoms (cough, sore throat, nasal discharge, nasal closing, etc.), headache, malaise, etc.	114 100%	0 0%
I know that many COVID-19 patients complain of olfactory and taste symptoms.	114 100%	0 0%
I know that COVID-19 was initially thought to spread with contact or droplet infections but has now been proven to spread with aerosol infections.	92 80.7%	22 19.3%
I know that in the elderly, underlying diseases (chronic respiratory diseases, diabetes, cardiovascular disease, etc.) are high-risk factors for COVID-19.	113 99.1%	1 0.9%
I know that the COVID-19 virus remains in the air for about 3 hours in aerosols, about 72 hours on plastic and stainless-steel surfaces, about 24 hours on cardboard surfaces, and 4 hours on copper surfaces.	61 53.5%	53 46.5%
I know that COVID-19 viruses are more attached to patient pillows, telephone answering machines, TV remote controls, chair takers, and toilet environments.	92 80.7%	22 19.3%
I know that most COVID-19 patients are the subject of infection transmission.	101 88.6%	13 11.4%
I know that COVID-19 is transmitted before onset (2 days before onset) or from asymptomatic patients.	106 93.0%	8 7.0%

Source: Drafted by author based on the research findings in the current study.

2.2.2. Attitude of Care Workers in Japan

Table A1.3. Attitude of Care Workers in Japan

Please tell us about yourself.	Yes	No
I like to do to new things, and to go to new fields.	66 57.9%	48 42.1%
I think I am more curious.	55 48.7%	58 51.3%
I think I am contributing to society.	60 52.6%	54 47.4%
I am a better fit in my new environment soon.	53 46.5%	61 53.5%
I get to know people and become friends as soon as I get to know them.	33 28.9%	81 71.1%

I can tell people my thoughts and thinking right away.	38 33.3%	76 66.7%
I will not maintain even if I am unreasonable.	45 39.5%	69 60.5%
I have three or more hobbies.	40 35.1%	74 64.9%
I am the type who does not give up things easily.	53 46.5%	61 53.5%
I like to try various things.	59 51.8%	55 48.2%
I think I am happy.	80 70.2%	34 29.8%
I have friends and family who I can consult on anything.	86 75.4%	28 24.6%
I am the one who switches feelings quickly.	56 49.1%	58 50.9%
I am excited to think about my future.	24 21.1%	90 78.9%
I believe that adversity is an opportunity to grow myself.	44 38.6%	70 61.4%
I try to challenge difficult events.	49 43.0%	65 57.0%
I think that I will tackle the next opportunity even if I fail.	75 65.8%	39 34.2%
I switch my feelings and act optimistically.	69 60.5%	45 39.5%
I can find goodness and appreciate even those who are not good at it.	64 56.1%	50 43.9%
I can work hard towards my goal.	74 64.9%	40 35.1%
I think there are good things in the future.	71 62.3%	43 37.7%
I like to engage with people as a supporter.	82 72.6%	31 27.4%
I have a family who listens to my troubles and advises me.	81 71.1%	33 28.9%
I have someone to support me.	95 93.3%	19 16.7%

I have a friend who can consult with me.	92 80.7%	22 19.3%
I can take myself positively.	60 52.6%	54 47.4%
I can control my emotions moderately.	79 69.9%	34 30.1%
I can analyse the causes of stress.	81 71.1%	33 28.9%
I can ask a person for help.	63 55.3%	51 44.7%
I am aware of myself.	65 57.0%	49 43.0%
I can be a distraction, such as being passionate about hobbies.	77 67.5%	37 32.5%
I have a boss who can support me.	66 57.9%	48 42.1%
I can rely on peers and seniors who can help each other in the team.	80 70.2%	34 29.8%
I can use the means and resources necessary to work as a supporter.	75 67.0%	37 33.0%
I analyse the situation and work on solving the problem.	77 67.5%	37 32.5%
I have encouragement and support from many professions.	59 52.7%	53 47.3%

■ Please tell us about the changes in yourself since the outbreak of COVID-19.	Yes	No
I cannot sleep or my sleep is shallow.	28 25.0%	84 75.0%
I have lost my appetite.	3 2.7%	110 97.3%
I eat more than usual.	30 26.8%	82 73.2%
I have been suffering from physical problems such as headaches and abdominal pain.	16 14.2%	97 85.8%
I am suffering from dizziness.	8 7.1%	104 92.9%
I am overly frustrated.	19 16.8%	94 83.2%
I am becoming restless and not concentrating in my work.	8 8.0%	104 92.0%

I cannot get out the helpless thinking and the worry about anxiety of my thoughts.	14 12.4%	99 87.6%
I am not motivated and am becoming hesitation to go to work.	24 21.2%	89 78.8%
I am uneasy about the response to the infected person.	42 37.2%	71 62.8%
I have an 'excessive fear' of viral infection.	17 15.0%	96 85.0%
I feel lost and anxious in the working place because there are no clear instructions, scientifically based explanations.	20 17.7%	93 82.3%
I spend my days with the thought that we have to work hard.	61 54.0%	52 46.0%
I am suffering because I am told to 'avoid' the functions and relationships that have been required so far in the long-term care field.	25 22.1%	88 77.9%
I have a strong sense of anxiety that I will carry the infection.	41 36.3%	72 63.7%
I have anxiety about the future with no exit.	43 38.1%	70 61.9%
I feel that the amount of work due to infection prevention measures is increasing more than normal.	59 52.2%	54 47.8%
I feel that there is no environment for providing safe and secure long-term care.	36 31.9%	77 68.1%
I have an anxiety against infection because I have an overwhelming shortage of supplies such as masks, disinfectant alcohol, and protective equipment.	7 6.2%	106 93.8%
I am worried about when I am going to get an infection.	58 51.3%	55 48.7%
I am worried that I am going to infect with a family.	52 46.0%	61 54.0%
I am afraid I will spread infectious diseases in the workplace.	56 49.6%	57 50.4%
Even if I thought that there was 'no choice' in my mind because I refrained from going out, there was a psychological burden.	63 55.8%	50 44.2%

Source: Drafted by author based on the research findings in the current study.

2.2.3. Practice of Care Workers in Japan

In this regard, I did a cross tabulation with years of service.

Table A1.4. Practice of Care Workers in Japan

■ Can you prevent droplet infection?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
If a client has symptoms (fever, etc.) that are suspected to be a droplet infection, I will refrain from providing the service in principle.	6	19	3	5	0	1	34
I do not go to work as a rule if I suspect a droplet infection.	9	24	23	22	18	3	99
When I contact with a patient, I must wear a high-performance mask (N9512, etc.).	7	17	10	10	3	2	49
If I cough or sneeze without wearing a mask, cover my mouth and nose with a tissue, etc., and discard it after use.	12	25	24	21	20	3	105
If I use a handkerchief, towel, etc., I do not share that handkerchief or towel with anyone.	12	27	24	23	19	3	108
I wash handkerchiefs and towels with saliva and runny noses in my hands with soap under the flow of water.	8	16	15	10	5	2	56
I help clients wear surgical masks.	4	13	7	8	5	1	38
I do enough ventilation.	11	26	25	21	16	3	102
Since contact infections can also occur with droplet-infected pathogens, I disinfect common facilities with a lot of contact (handrails, doorknobs, computer keyboards, etc.)	7	21	18	20	16	1	83
In principle, I provide care for clients in a private room.	6	17	15	15	10	1	64
If it is not available, I will care for patients in a group-isolated room.	4	13	9	13	6	2	47

If the patient and other clients cannot be isolated, I will make a distance such as 2 metres or more of the bed space or partitioning the bed with curtains, partitions equipment, etc.	6	14	13	13	11	2	59
I keep the window open as much as possible, although I need not set up special air conditioners.	9	25	25	21	16	2	98

■ Can you help client's diet?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I have done hand hygiene before meal support.	8	21	22	21	21	3	96
I wear a mask, an apron, goggles, a face shield, and disposable gloves.	6	16	15	17	9	1	64
I wipe the table with wet tissue with alcohol (alternatively, used with diluted sodium hypochlorite).	7	22	20	20	18	3	90
I help with meals one by one separately.	3	14	9	9	6	1	42
I have double-worn gloves to help the next client's meal support quickly and safely. I will remove one of gloves when one person ends, and I will be able to help the next person immediately.	3	9	2	3	1	1	19
I sit diagonally behind the user and watch the swallowing to support the meal.	2	11	10	11	6	2	42
I am careful not to get too close to a client.	4	15	12	9	10	1	51
I pull my upper body back so that I do not get bathed in the client's saliva etc.	5	13	16	10	8	2	54
I am always positioning on the right or left side of a client to help him/her stay out of the way of the coughing client.	7	17	22	17	17	3	83

I avoid verbal conversations as much as possible during meals.	3	14	6	9	7	2	41
I am communicating with non-verbal signs (e.g. nodding sign, gesture, and body language).	7	14	7	8	7	1	44

■ What are you doing with the apron after use?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I am slowly taking off so that the outside of the apron does not touch my face, hair, or clothes.	6	17	13	15	9	3	63
I am taking off the apron away from me and folding it outside in.	6	18	17	16	13	3	73
I put the folded apron in a plastic bag and close the mouth of the bag tightly.	5	16	11	11	4	2	49
I am going to spread out the plastic bag to put the apron in before I start caring.	5	15	13	12	4	2	51
I always wash my hands after I put away my apron.	7	17	14	14	12	2	66
I take care not to touch the apron directly and wash it promptly after take home.	5	14	12	12	2	2	47

■ How do you communicate with the client?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I am standing shoulder to shoulder and talking with client who speak loudly, avoiding face-to-face conversations.	3	17	12	8	1	3	44
I request the client to wear a mask, and I avoid the face to face getting in close contact directly.	4	14	8	9	4	1	40
I am talking with the client in a well-ventilated place.	7	16	16	13	9	2	63

■ Are you preventing the spread of infection to clients?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I do not touch my eyes, nose, or mouth when I touch water faucets, doorknobs, and electric switches that everyone touches.	10	23	22	16	12	2	85
In the event of an infectious disease, I will thoroughly perform such hygiene appropriately as hand washing, vomit, excrement, etc.	10	24	25	19	18	3	99
I take particular care not to spread the infection through my own or my colleagues.	9	26	24	21	18	3	101
I urge customers to wash their hands.	5	19	22	19	15	3	83
If I have symptoms or suspect an infection, I will report it to my supervisor and consult with them about how to respond.	10	24	25	21	20	3	103
I will seek instructions from doctors and nurse and disinfect our facility if necessary.	9	22	19	19	17	2	88
I intend to follow directions by a doctor, if necessary, for isolating infected client into the private room.	10	19	22	19	15	2	87
I pay attention to the health management not only for clients who are suspected of infection, but also for all clients, because there are no symptoms now, physical condition may change suddenly in the future.	9	20	23	21	15	3	91

■ What are you doing when you leave?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I am changing clothes between commuting and working.	7	23	23	20	18	3	94
I am wearing a mask and keeping my distance from other people.	11	27	25	20	19	3	105
I do not touch my face when I touch the straps and handrails.	11	25	20	16	9	2	83

When I am done cleaning up, I am doing hand hygiene before I go home.	11	25	23	20	20	3	102
I try not to touch things after hand hygiene.	7	19	19	15	10	1	71
I am wearing a jacket just before I leave the front door or after I leave the front door.	4	17	11	13	11	1	57

■ Are you mindful of the following when taking a break?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I have taken more than 2 minutes with others.	10	23	17	15	14	2	81
I have opened several parts of the room and ventilated the room.	9	24	22	21	14	3	93
I am refraining from chatting.	9	24	19	16	9	2	79
I try not to talk loudly at mealtime.	11	25	23	22	13	3	97
I have enough sleep, and a solid diet.	9	23	20	15	14	2	83
I am consulting someone when I am mentally cornered.	8	17	13	14	12	1	65
I do physical condition checks such as body temperature measurement before going to work, and do not go to work when I have symptoms.	10	26	23	24	21	3	107
I avoid gathering in groups in a space with poor ventilation, even outside the rest area or outside of the workplace.	12	22	25	20	17	2	98
When eating meals, I will thoroughly devise ways to sit as far away as possible, and to sit one by one so as not to face each other.	11	26	21	20	13	3	94
I am trying to avoid 3 C's and enjoy.	12	25	24	22	18	3	104
I take particular care of conversations loudly when I take alcohol.	10	18	19	17	9	2	75

■ How do you take meals when COVID-19 is prevalent?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I avoid congregational meals as much as possible.	10	26	25	22	17	3	103
I am serving small meals, avoiding platters for share.	12	22	22	20	11	3	90
In the case of platters for share, I change chopsticks for distributing foods and for eating them.	10	22	18	22	15	3	90
I do not eat at restaurants and use take-home style and delivery system instead.	7	19	15	12	9	3	65
When I have meals together, I sit side by side, not face-to-face with the other person.	5	20	12	14	7	2	60
I stop chattering during meals.	6	16	14	13	13	3	65
I avoid sharing of a drinking glass.	12	25	24	21	21	3	106

■ Can you take basic actions to prevent infection?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I have intervals of as much as 2 metres (minimum 1 metre) with others.	9	23	16	17	14	3	82
I try not to be directly in front of the other person when I talk with them.	7	23	16	14	1	2	63
I wear a mask as much as possible even if I do not have any symptoms.	12	25	24	23	19	2	105
Even when I must put on the mask, I take it off appropriately so as not to become hyperthermia when climate is hot.	9	16	15	18	10	3	71
I always wash my hands and face after I get home.	9	24	21	19	8	3	84
When I go to a crowded place, I change clothes as soon as I get home.	7	21	21	15	12	3	79
I am washing my hands with water and soap for 30 seconds.	7	19	21	17	12	2	78

I have done alcohol disinfection of my fingers.	9	23	21	22	17	2	94
I keep protecting cough etiquette.	12	23	24	22	20	3	104
I control ventilation frequently.	11	24	24	20	13	2	94
I check my health such as measuring body temperature in every morning.	10	24	23	23	17	2	99
I am refraining from going out if I have symptoms such as fever or cough.	12	25	24	22	20	3	106
I am avoiding 3C's.	12	25	25	22	19	3	106
I exercise self-control of entering or leaving areas where COVID-19 is prevalent.	12	26	24	22	18	3	105
I check where and when I met with someone.	9	19	13	15	7	2	65
I am using a contact confirmation app.	6	12	8	6	13	1	46
I try to know the infection situation in various places.	10	22	17	16	13	2	80
I avoid traveling when public transportation is crowded.	7	22	18	17	11	2	77
I move as much as possible by bicycle or on foot.	10	20	19	14	9	2	74
I try to keep my distance when I go by with people.	7	19	17	14	7	3	67

■ How are you shopping when COVID-19 is prevalent?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I am shopping using mail order.	9	19	14	12	9	2	65
When I go shopping, I go by myself or with a small group.	12	25	25	23	21	3	109
I am shopping at a time when the store is not crowded.	7	20	18	17	11	1	74
I am using electronic payments.	8	19	11	11	7	2	58
I am planning to get my shopping time finished quickly.	9	22	22	19	12	2	86
I do not touch the samples on display.	6	20	12	13	2	1	54
I take the distance back and forth when I line up at the cash register.	11	25	26	23	20	3	108

■ How do you enjoy entertainment, sports and events when COVID-19 was infested?	Less than 1 year	1–3 years	3–5 years	More than 5 years	More than 10 years	No Answer	TOTAL
I do not go to the full-service restaurant.	7	23	19	16	8	3	76
I do not go to karaoke.	9	24	23	21	17	3	97
I enjoy the entertainment programme using online as much as possible.	8	20	14	14	8	3	67
I use the reservation system.	9	15	12	14	7	3	60
I do not stay longer in a small room.	9	19	21	17	13	3	82
I use times and places where people are few.	9	18	19	18	13	2	79
I utilise the contact confirmation app.	5	10	8	5	7	1	36

Source: Drafted by author based on the research findings in the current study.

2.3. Findings

2.3.1. Knowledge of Care Workers in Japan

The response was 'I know' to almost all questions, and it can be said that those surveyed have sufficient knowledge about COVID-19 as LTCWs. However, in response to the item 'I know that the COVID-19 virus remains in the air for about 3 hours in aerosols, about 72 hours on plastic and stainless-steel surfaces, about 24 hours on cardboard surfaces, and 4 hours on copper surfaces', only about half (53.5%) answered that they knew this.

2.3.2. Attitude of Care Workers in Japan

Overall, the responses indicated that many employees have a positive attitude. While approximately 70% answered 'No' to items related to sociability, such as 'I get to know people and become friends as soon as I get to know them.' and 'I can tell people my thoughts and what I am thinking right away', about 70% of respondents answered 'Yes' to questions related to optimism, such as 'I think I am happy' and 'I think there are good things in the future.'

In addition, about 70% of the respondents answered positively to questions related to their qualifications as a caregiver, such as 'I like to engage with people as a supporter.' This is thought to be due to the above-mentioned facility managers taking care to provide mental health support for their employees, and more than 80% answered 'Yes' to 'I have someone to support me.' In terms of questions about changes in themselves since the outbreak of COVID-19, physical changes (deteriorating physical condition) were less than 30%, but more than 50% responded with 'I spend my days with the thought that we must work hard.' and 'I feel that the amount of work due to

infection prevention measures is increasing more than normal', indicating that staff are working hard to prevent infection. The fact that so few responded with 'I feel lost and anxious in the working place because there are no clear instructions, scientifically based explanations.' Or 'I have an anxiety against infection because I have an overwhelming shortage of supplies such as masks, disinfectant alcohol, and protective equipment' may be taken as an indication that infection control measures are being implemented in the workplace.

2.3.3. Practice of Care Workers in Japan

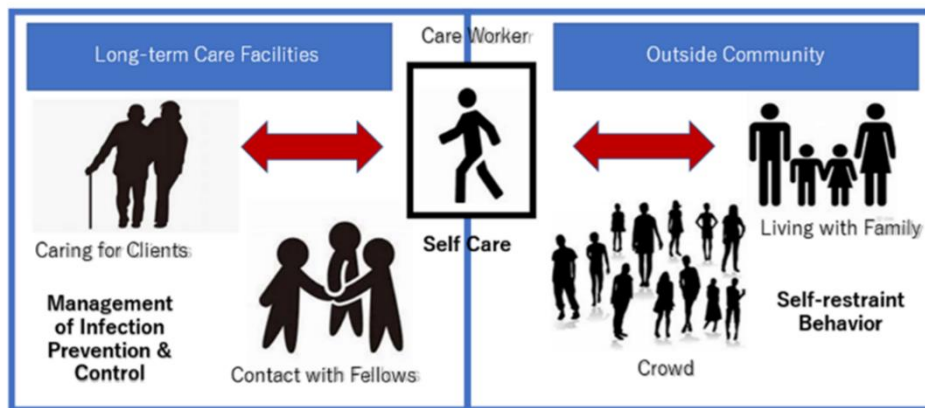
Working on the hypothesis that care workers who have worked over 5 years are likely to be more thorough in infection control, we cross-tabulated by the length of tenure and the practice. The results show that infection control measures are being taken regardless of the tenure, and many employees who have fewer years of service answered 'Yes', indicating that they are reacting to the situation seriously.

Regarding meal assistance, the number of respondents who answered 'Yes' was low, as was the number of actual care workers. As a result, in many facilities, one care worker attends to two (or more) clients, with the result that it is not possible to provide such assistance from behind or to maintain distance. Also, such assistance is often provided alternating between clients, which meant that only a few respondents were able to answer 'Yes' to items such as 'I wear two pairs of gloves to help the next client's meal support quickly and safely'. 'I remove one pair of gloves when the first client is finished, so I can assist the next client immediately.'

Also, it can be seen that care workers are careful of their activities in their daily lives outside of work. Almost all respondents answered 'Yes' when asked whether they were avoiding eating out or sharing food and drink, wearing masks, having consideration for others when coughing, avoiding crowded places, closed spaces, close contact (3Cs), restricting their activities, shopping in small numbers and in a short space of time, avoiding amusement facilities, etc. In addition, they appear to be taking careful precautions when traveling to and from work and during rest breaks, as well as changing their clothes and masks, ventilating room and eating without speaking.

Since essential workers such as care workers are also citizens engaged in ordinary daily life, thorough infection control measures must be taken even outside the workplace (at home, when commuting, when going out). The extent of the professional awareness affects the prevention of infection, and it shall cause the suppression of the occurrence of infection cluster at LTCFs.

Figure A1.5. COVID-19 Risks of Long-term Care Workers



Source: Compiled by authors.

3. Lessons Learnt

LTCWs had made efforts by:

- Thorough implementation of infection control measures in daily life (avoid eating out and sharing food or drinks, wear masks, have consideration for others when coughing, avoid the 3Cs, restrict activities, shop in small numbers and within a short space of time, avoid amusement facilities).
- Thorough self-management on a daily-life basis.

Facility managers had made efforts:

- Working to build a relationship of trust with staffs on a daily-life basis.
- In an emergency such as COVID-19 infection, provide LTC that prioritises life and create a workplace environment that allows for nurses to make and carry out medical decisions. Also, there should be a comprehensive LTC structure throughout the workplace, so that nurses are also able to provide long-term care.
- Clarify the chain of command in the event of an emergency.
- Waiting for instructions from the government or public health centres may cause to delay emergency responses under the risk of a cluster outbreak, so facility managers should make decisions and implement them by themselves.
- Take measures to prevent the spread of infectious diseases, focusing on zoning within the facility (see chapter 3 on business continuity plans for details).
- Pay attention to the care of the mental health of all staff.
- For mitigating the undue pressure and stress on daily work, it needs to provide the time and space for the relief of tension, or to give small presents, etc. in order to relieve stress (small considerations such as allowing staff the time to choose their own lunch boxes, can be effective).

It is important to have a broad perspective on a daily-life basis, build personal connections, and know who to ask when in trouble so that the above actions can be implemented instantly.

(Reported by Hiromi Kinebuchi)

Appendix 2

Conferences for Learning and Sharing Results of Our Research

Figure A2.1. Figure Volunteers Group Discussions on 17 June 2022

ERIA
Economic Research Institute for
ASEAN and East Asia

Public Hearing Meeting for Capacity Building for Resilient LTC during COVID-19 Situation
Friday 17th June 2022
TIME 09.00 AM – 12 PM
Bueng Yitho Town Municipality Office,
Pathum Thani Province

Resilient Long-term Care for the Elderly under COVID-19 Pandemic: The Capacity Building for Resilient LTC in Thailand; Training Programme of Infection Prevention for Care Workers and Caregivers

Kaysorn Sumpowthong, PhD
Faculty of Public Health,
Thammasat University
Project Investigator

Panicha Boonsawad, PhD
Fundamental Nursing and Nursing
Administration Department,
Srisavarindhira Thai Red Cross
Institute of Nursing
Researcher

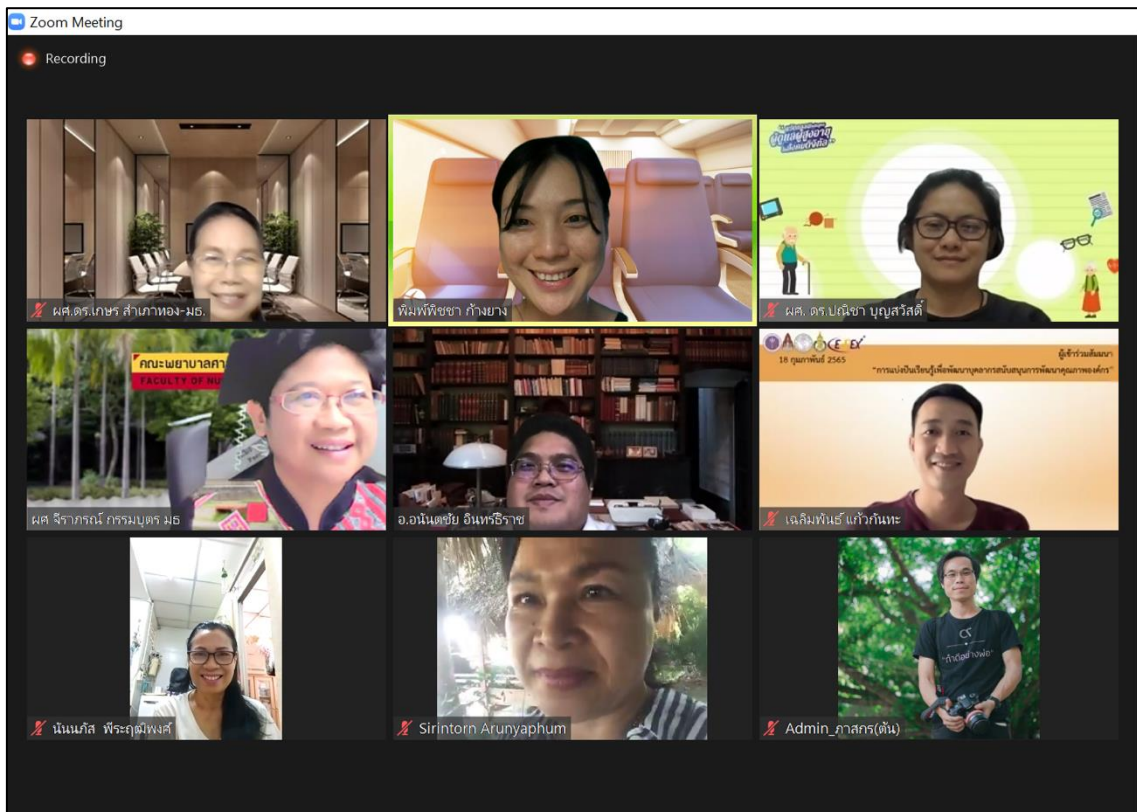
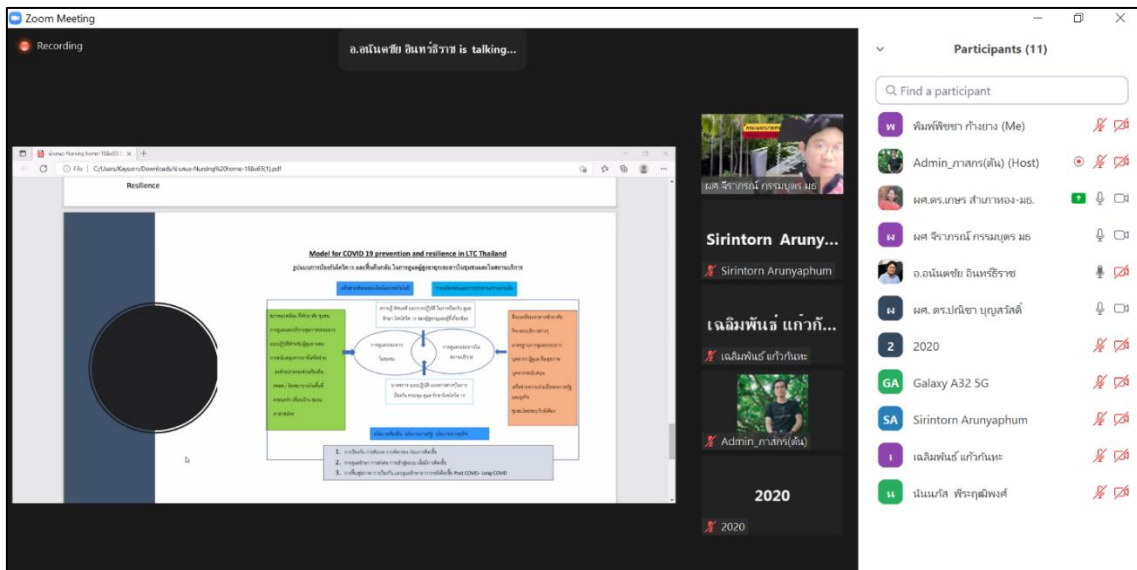
Anantachai Inthiraj
Health and Elderly Establishment
Confederation (HEC)
Researcher

LINE | DOCS | Sastification



Source: Faculty of Public Health, Thammasat University/Srisavandhira Thai Red Cross Institute of Nursing/Health and Elderly Establishment Confederation, 2022.

Figure A2.2. Institutional Staff Group Discussions on 18 June 2022



Source: Faculty of Public Health, Thammasat University, 2022.

Appendix 3

Training Modules of Infection Prevention and Control

Existing Media for Training in Thailand

Episode 1: How to build a workplace that cares for the elderly to be safe from COVID-19. Healthcare facilities need to manage a clean and safe indoor environment and reduce the spread of the virus. Focus on the entrance screening point, ventilation in the building, and the cleanliness of the cafeteria.

Figure A3.1. Guidelines for Private Nursing Homes to Manage COVID-19 (Clip VDO)



Source: Thai Health Promotion Foundation (2021).

Episode 2: Establish a self-management system for staff and caregivers, including getting a vaccine, observing yourself regularly, using protective equipment, and hand washing.

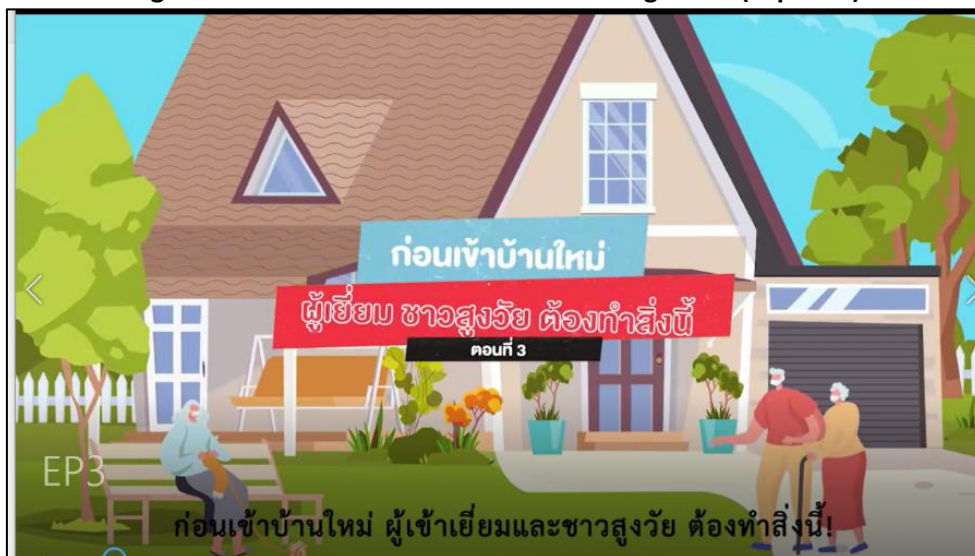
Figure A3.2. Guidelines for Care Workers to Prevent COVID-19 (Clip VDO)



Source: Thai Health Promotion Foundation (2021).

Episode 3: New residents, before entering the nursing home, visitors, and senior citizens must follow guidelines. Get vaccinated and use antigen test kits and protective equipment before joining the activity.

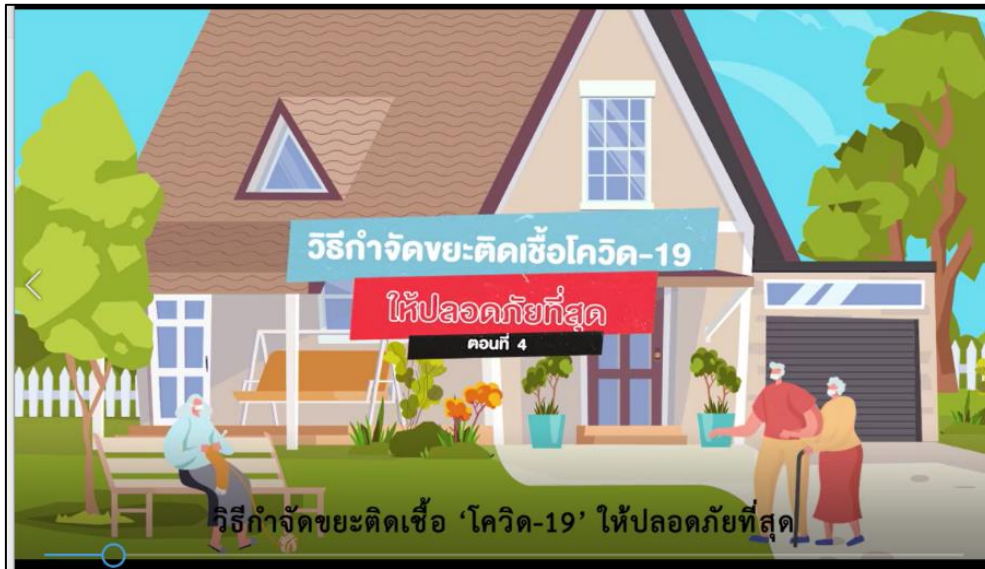
Figure A3.3. Guidelines for Visitors to Nursing Home (Clip VDO)



Source: Thai Health Promotion Foundation (2021).

Episode 4: How to dispose of garbage infected with COVID-19 as safely as possible.

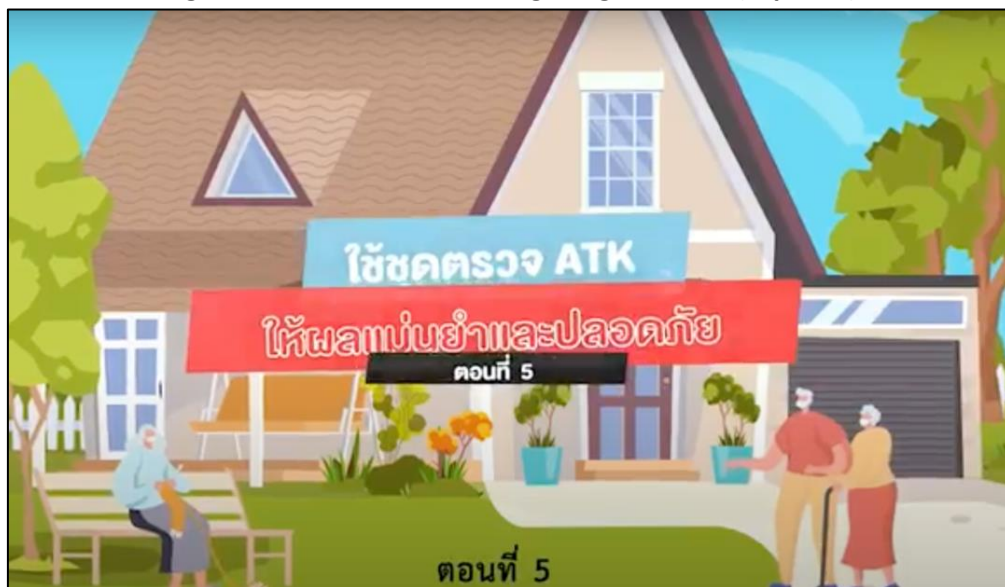
Figure A3.4. Guidelines for Waste Management in Nursing Home (Clip VDO)



Source: Thai Health Promotion Foundation (2021).

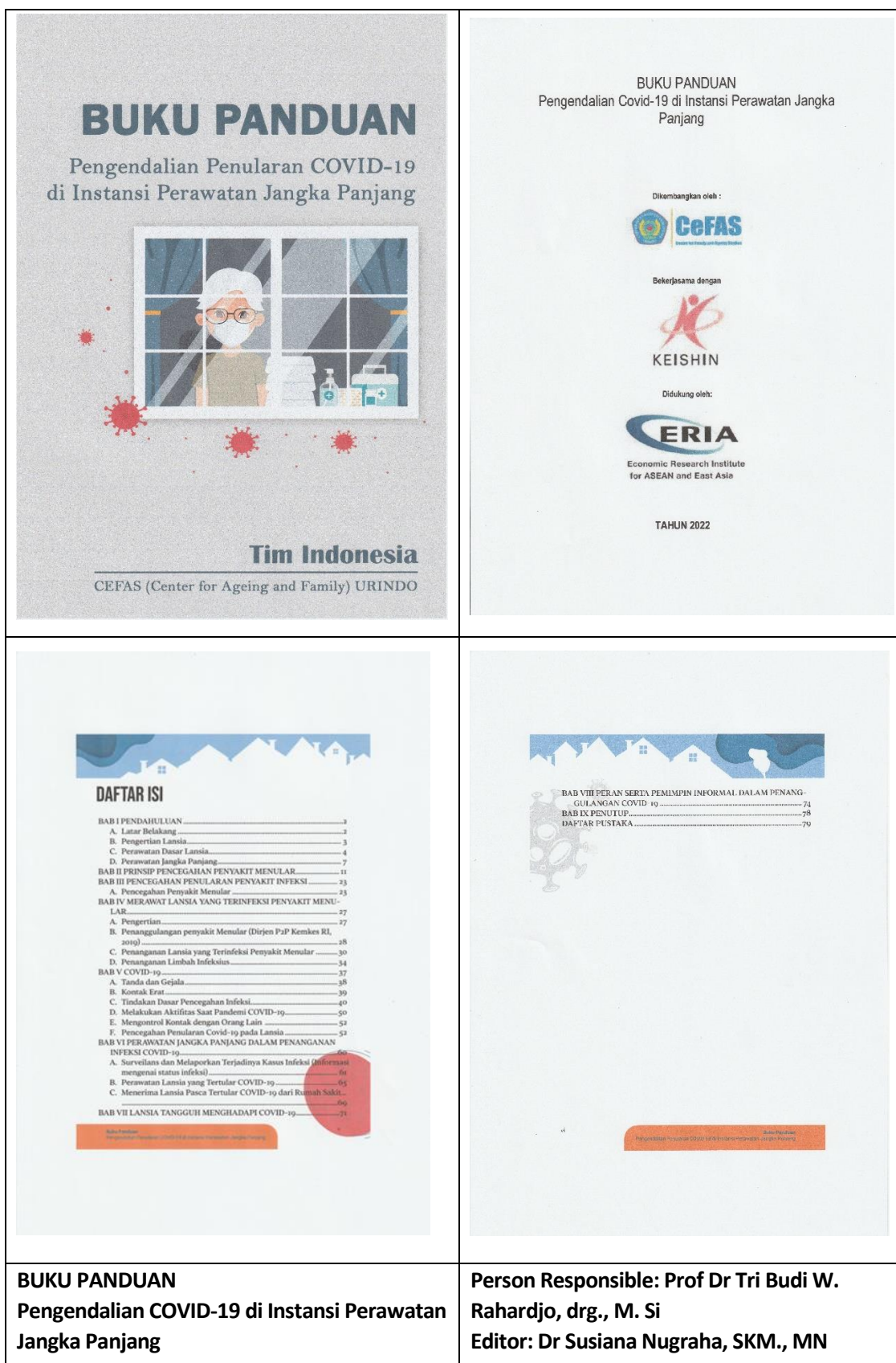
Episode 5: describes the use of an antigen test kit test kit that provides accurate and safe results.

Figure A3.5. Guidelines for Using Antigen Test Kit (Clip VDO)



Source: Thai Health Promotion Foundation (2021).

Figure A3.6. Training Module of Infection Prevention



BUKU PANDUAN
Pengendalian COVID-19 di Instansi Perawatan
Jangka Panjang

Person Responsible: Prof Dr Tri Budi W.
Rahardjo, drg., M. Si
Editor: Dr Susiana Nugraha, SKM., MN

Source: Center for Aging and Family, University of Respati, Indonesia, 2021.

Book Title: Guidelines for COVID-19 Control in Long-term Care Institutions (English translation)

Book description:

This book was developed in 2020–2021 during the COVID-19 pandemic based on the results of research conducted by the Center for Ageing and Family team. The book covers various aspects of long-term care, including efforts to prevent the spread of infectious diseases, especially in the elderly. With the publication of this book, it is hoped that it can become a reference in making efforts to prevent infectious diseases, especially COVID-19.

The book consists of:

- Background and the concept of long-term care
- Principles of infectious diseases prevention
- Prevention of infectious diseases transmission
- Caring for elderly infected with infectious diseases
- The COVID-19 pandemic and its impact on the health of the elderly
- Management of COVID-19 transmission prevention in long-term care institutions
- The resilience of the elderly in the face of the COVID-19 pandemic
- The role of informal leaders in tackling COVID-19