

## ■ Express report

# The Hand Hygiene Behaviors of the Public in Response to the Pandemic Influenza A(H1N1) 2009 in Japan

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## 1. Background

One of the important preventive measures for influenza is hand hygiene. The hand hygiene is well-known among people as for important preventive measure for the pandemic influenza A(H1N1) according to too much information by mass media in Japan. Alcohol-based hand rubs are recently set up in doorways such as hospitals, schools, office buildings, and many other institutions. However, the compliance of hand hygienic behavior has never surveyed in Japan. Therefore, compliance ratio of the person using an alcohol-based hand rubs in hospitals, universities, and office buildings has been investigated.

## 2. Methods

At each lobby of the main entrance three hospitals, two universities, and four companies, the compliances of hand hygiene were observed by one or two investigators from 1st and 15th of October 2009.

The procedure of the investigation is as follows:

- 1) An alcoholic hand rub dispensers was placed at the main entrance.
- 2) Compliances were observed for one hour in the morning when a lot of persons passed.
- 3) Posters demonstrating the importance and encouraging hand hygiene implementation for the prevention of influenza were displayed.
- 4) The presence of the investigators (one or two) was not informed.

- 5) The hand hygiene compliances of the people were observed at entering and leaving the each entrance lobby.
- 6) Additional demographic data (gender estimated and age group) were also collected.

## 3. Results

The institutions where the data was collected were three hospitals (A,B,C), two universities (D,E), and four companies (F,G,H).

The rate of the compliance was 13.2% as shown in **Table 1**. As demonstrated in **Figure 1**, the mean compliance rate in the hospitals is the lowest among those three types of institutions.

The apparent difference between female and male has not been demonstrated; however, the tendency to have higher compliance rate among male than female as in **Figure 2**.

## 4. Discussion

The following five tendencies were observed in the results of the investigation. First, the hand hygiene is not performed among the persons carrying articles with their both hands. Second, when parents do not urge their children, the hand hygiene was never performed. Third, it seemed that the hand-push type dispenser was easier to use than the foot pedal type. Fourth, there were some people who happened not to find the hand rub dispenser at all. However, some of them did not perform the hand rub even their finding the dispenser and the poster. Almost all people did not perform hand hygiene when they left the hospitals, the schools, or the companies.

Table 1

		entering and leaving	Gender		Age group									
			Male	Female	<10's	10's	20's	30's	40's	50's	60's	70's	>80's	
Hospital	A	H	17	8	9	0	0	0	0	2	7	3	4	1
		N	53	26	27	0	0	1	1	3	12	10	18	8
		%	32.1	30.8	33.3									
	B	H	42	20	22	3	0	7	6	7	8	7	4	0
		N	525	198	327	10	15	54	93	55	86	99	101	12
		%	8.0	10.1	6.7									
	C	H	34	19	15	4	0	1	5	8	6	4	5	1
		N	326	152	174	12	1	5	26	52	68	81	74	7
		%	10.4	12.5	8.6									
University	D	H	28	2	26	0	18	8	1	1	0	0	0	0
		N	251	23	228	0	177	53	12	3	2	3	1	0
		%	11.2	8.7	11.4									
Company	E	H	32	5	27	0	23	4	2	3	0	0	0	0
		N	198	24	174	0	139	34	12	4	8	0	1	0
		%	16.2	20.8	15.5									
Company	F	H	18	14	4	0	0	4	7	5	2	0	0	0
		N	162	122	40	0	0	44	69	36	12	1	0	0
		%	11.1	11.5	10.0									
	G	H	12	9	3	0	0	3	4	4	0	1	0	0
		N	61	38	23	0	0	16	18	13	10	4	0	0
		%	19.7	23.7	13.0									
	H	H	17	15	2	0	0	4	3	8	2	0	0	0
		N	80	51	29	0	0	34	23	13	9	1	0	0
		%	21.3	29.4	6.9									
I	H	34	27	7	0	0	8	14	5	4	2	1	0	
	N	118	98	20	0	0	27	54	20	11	5	1	0	
	%	28.8	27.6	35.0										
Total	H	234	119	115	7	41	39	42	43	29	17	14	2	
	N	1774	732	1042	22	332	268	308	199	218	204	196	27	
	%	13.2	16.3	11.0	31.8	12.3	14.6	13.6	21.6	13.3	8.3	7.1	7.4	

H:No. hand-rubbed N:Total number of entering and leaving

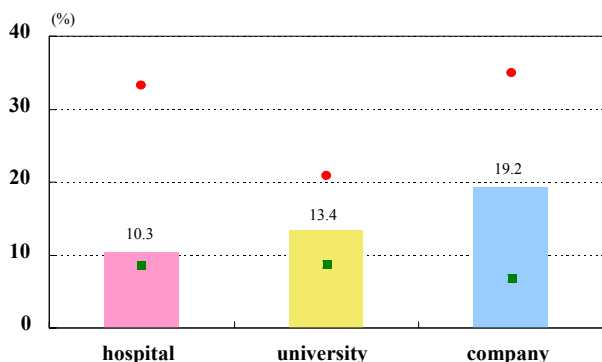


Figure 1 Hand hygiene compliance rate by investigation place

Bar with numerical value is average, circle (red) is maximum and square (green) is minimum rate.

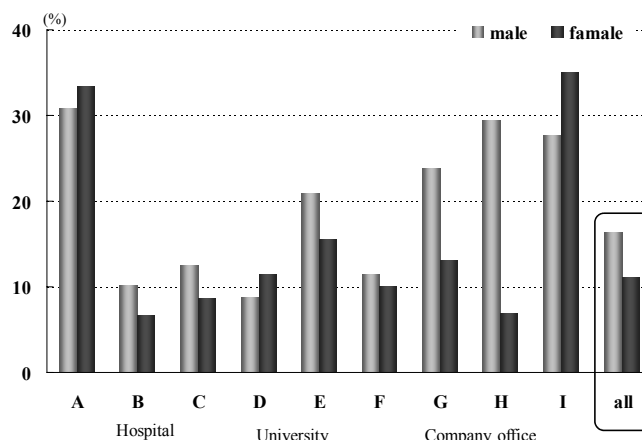


Figure 2 Hand hygiene compliance by gender

Lastly, although the reason is not clear, it is an interesting result that the tendency to have higher compliance rate of hand hygiene among males than among females which was observed in this investigation.

The poster design is shown to each institution. The selection of the hand rub dispenser (push type or stand type) was also depending on each institution. In this study, the types of people, such as students, administrative personnel, doctors, nurses, employee, patients who passed the entrance were not distinguishably observed. Also the entering and leaving persons did not have been distinguished.

It will require further investigation with detailed categorization of types of people.

### 5. Conclusion

This is the first observational case study to make clear the hand hygiene behavior of the public in Japan. In the results of this study, it was shown that the mean compliance of hand hygiene practices in the investigated places was 13.2%. But it was not possible to conclude whether or not the compliance rate is low. Even though too much educational

programs on the necessity of hand hygiene for the prevention of pandemic influenza are released by mass media, public compliance rates for hand hygiene are seemed to be rather low. Therefore, the more effective intervention must be discussed to obtain the higher compliance rates than that we have observed, if the effect of hand hygiene to prevent the pandemic influenza is proved in coming winter season in the northern hemisphere. For this purpose, more prospective

study on the compliance tendency of public hand hygiene in detail is required.

#### ■Reference

- 1) R Murray, C Chandler, Y Clarkson, N Wilson, M Baker, R Cunningham: Sub-optimal hand sanitizer usage in a hospital entrance during an influenza pandemic, New Zealand, August 2009. *Eurosurveillance* 2009 ; Volume 14, Issue 37, 17 September