

Sequence of events and evaluation for initial management of new influenza viruses in Japan

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Japan Public Health Association

The group for risk communication on novel influenza

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1. Sequence of events for initial measures against new influenza in Japan

(1) Advance preparations

After the outbreak of the highly pathogenic avian influenza H5N1 in Southeast Asia etc., the government established “an action plan for the management of new influenza” in December 2005 and created a stockpile of anti-influenza drugs to manage future outbreaks of new influenza. In addition, at an expert advisory meeting attended by public health experts, including public health center directors, and medical experts, a “Guideline for pandemic influenza (after phase 4 version)” was established in February 2007. Furthermore, since there was an opinion that measures for the pandemic phase should be reinforced, a conference of ministries and government offices revised the action plan and guidelines in February 2009, with the following 2 items as main objectives.

1. To suppress the spread of infection as much as possible and to minimize health damages
2. To prevent the collapse of society and economy

Public health centers and local governments subsequently began to train for active epidemiologic investigation and to prepare for the establishment of fever clinics and for

securing beds in cooperation with local personnel involved according to the action plan and guideline.

(2) Outbreak phase in foreign countries

On April 21, 2009, soon after the revision of the action plan, the US CDC reported the infection of small children with the swine influenza A (H1N1); additionally, a considerable number of casualties were reported in Mexico and other countries. On April 27, the WHO raised the influenza pandemic alert level to Phase 4. On April 28, the Japanese government imposed a strict quarantine (shoreline operations) on persons traveling from prevalent countries and directed public health centers to conduct health surveillance after entry into Japan, according to the action plan. Additionally, for local containment, the public health centers established fever consultation centers, and fever clinics were also established for fever patients with a travel history to foreign countries. As part of the action plan, shoreline operations and containment were implemented to delay the outbreak and spread of the influenza virus in Japan.

The government requested a report on the accumulation of cryptogenic acute respiratory illness accompanied by fever within the country. However, since the management of group occurrences of influenza-like diseases was not mentioned and the subjects for PCR examination and case definition were limited, in principle, to persons with a travel history to prevalent countries, the management of other people was not conducted. On May 8, three patients were identified at the Narita Airport Quarantine Station, and more patients were identified among those who were stopped. At the beginning of May, reports indicated that many of the patients in foreign countries had mild symptoms, and this was also the case for the patients identified at Narita Airport. Later, it was revealed that some infected patients had

entered Japan prior to May 8.

(3) Outbreak phase in Japan

On May 16 in Hyogo prefecture and then in Osaka prefecture, group occurrences of the new influenza were reported in people, including senior high school students who had no travel history to foreign countries. Soon after that, fever consultation centers received a flood of inquiries, and the public health centers responsible for these areas had difficulty implementing measures such as active epidemiologic investigation. In such cases, the action plan originally stated that prefectures should be able to judge that the phase had entered a pandemic phase and that general medical institutions, except for fever clinics, should discontinue performing medical examinations and treatments and receiving inpatients. However, the phase was not changed, and the discontinuation of medical examinations and treatments and the hospitalization of inpatients in general medical institutions and other social measures, such as the closure of schools for about 1 week, were performed. At these times, reports from abroad indicated that the new influenza was not that severe but that it tended to become serious in young patients with underlying diseases and in pregnant women. In addition, many of the patients in the Kinki district had mild symptoms.

On May 22, the government newly established a “Practical guideline for requesting the securement of medical care, quarantine and temporary closure of schools and nursing facilities” without revising the action plan and divided Japan into 2 districts: a district in which the infection was in an early stage, with a small number of patients, and the spread of infection should be prevented; and a district in which the number of infected patients was rapidly increasing and in which the prevention of aggravation should be emphasized. Consequently, measures allowing flexible management became available in the district with a

rapidly increasing number of patients. At these times, the number of fever consultations and medical consultations at the fever clinics was increasing in the public health centers and other facilities but then began to decrease.

WHO declared a phase 6 on June 12 and requested that each country undertake flexible measures. Based on discussions made by the members of this research group, the Japanese Association of Public Health Center Directors requested the government to reconsider hospitalization measures, to reconstruct the medical systems, to change the case definition, and to reconsider surveillance on June 16. Based on the opinions of experts, the government revised the practical guideline on June 19 and established plans to abolish hospitalization measures, to consolidate the medical supply system including outpatient medical care in general medical institutions, to discontinue estimating the total number of patients, to conduct cluster surveillances, and to simplify quarantine measures in preparation for a widespread increase in the number of patients. These measures had been consecutively enforced by around July. Thereafter, the surveillance and active epidemiologic investigation duties of public health centers increased as a result of the increasing number of patients.

2 Estimation of the actual measures used by public health centers throughout Japan

A research group whose report is shown at appendix implemented survey for public health centers in Japan. The questionnaire intended for public health policy administrators was completed by 65% of 510 public health centers located throughout the country. Accordingly, the actual measures used by public health centers throughout Japan during the early stages after the outbreak of the new influenza at the end of April can be roughly outlined as follows. However, the selection of public health centers that responded to the questionnaire might have introduced a bias; accordingly, this estimate has some limitations.

Approximately 3,000 staff members were engaged in health surveillance for approximately 100,000 subjects.

A maximum of 5,000 staff members were engaged in approximately 900,000 fever consultations by July.

Approximately 4,000 people had a medical consultation at approximately 1,500 fever clinics by June.

Based on recommendations for hospitalization, approximately 600 hospitals and approximately 8,000 beds were secured for hospitalization.

Approximately 20,000 PCR examinations were performed, and approximately 5,000 solitary cases and approximately 3,000 group cases were confirmed; active epidemiologic investigations had been conducted for approximately 50,000 people by July.

Evaluation for initial management of new influenza viruses in Japan, which the survey group shown at appendix reported, is described below. Based on the problems in the initial management pointed out in this questionnaire survey, interim evaluations of and proposals for new influenza measures are presented to prepare for future health crisis management and outbreaks of new influenza, including highly pathogenic one. In this investigation, however, the initial management was evaluated by public health centers, and governmental measures were mainly commented on in open answer sections. Of note, the new influenza is still prevalent, and measures for its management are ongoing.

3. Lessons from and proposals for the initial measures of public health centers in Japan

(1) Preparations before the outbreak and business continuity

Many public health center staff members read the guidelines in advance. Some did not read the guidelines sufficiently, probably because they were transferred outside of public health centers as a result of the outbreak of the new influenza at the beginning of the fiscal year.

On the other hand, many public health centers did not make a business continuity plan (BCP). Many public health centers reduced, discontinued or postponed their businesses or considered doing so. Public health centers need to prepare a BCP for future events. To do this, institutional support from the government is also required (refer to 4. (7)).

(2) Shortage of staff members

The public health centers made great efforts. However, the number of staff members tended to be insufficient, and a heavy burden was placed on the staff, especially on public health nurses and physicians, because of shortages in personnel at the majority of public health centers. At public health centers that experienced a sudden increase in duties, the staff shortage was remarkable and staff members had to undertake nightshifts. To relieve excessive work burdens arising from staff shortages during outbreaks, the participation of staff members other than health policy administrators must be requested, in cooperation with the staff members employed by public health centers and the prefectural government headquarters and other branch offices.

On the other hand, the number of staff members at public health centers has been reduced as a result of administrative and fiscal reforms, despite the distribution of a local allocation tax. However, securing the support of physicians and public health nurses from other organizations is not always easy, and the required number of experts should be secured to enable public health centers to fulfill their responsibilities, such as protecting residents' health and safety.

(3) Cooperation with prefectural government headquarters

Cooperation with the prefectural government headquarters was useful for some public health centers and insufficient for others.

In addition to close information exchange and cooperation between these two institutions, prefectural government headquarters must be capable of making decisions promptly and appropriately and supporting public health centers adequately (refer to 3).

(4) Cooperation with local organizations and securement of medical systems

Most public health centers provided advice, information and meetings for medical associations and municipalities (other departments, in the case of municipal public health centers) within their territory, and many public health centers considered that cooperation with medical associations and support for municipalities worked well. Regarding the consolidation of medical systems in local areas, many public health centers had discussions with and made requests to medical personnel within the territory to establish fever clinics and secure inpatient medical institutions. Public health centers play important roles in securing local medical systems for infectious diseases. On the other hand, the evaluation of public health centers from the perspective of local medical services, such as medical associations, is also required.

Securing medical systems and places for preventive vaccinations at the peak of prevalence are current problems, and the further active involvement of public health centers is desired. The active promotion of cooperation among public health centers and local medical associations, medical institutions and municipalities is also needed in the future.

(5) Duties for preventing the spread of infection

Public health centers, under the instruction of the government and prefectural government headquarters, engaged in various duties to prevent the spread of infection, such as health surveillance, fever consultations, support for medical consultations at fever clinics, and active epidemiologic investigation, mostly according to the procedures outlined in the guideline. Many public health centers performed these duties even on holidays and at night. In the survey of public health center directors, many respondents answered that these duties were performed well to some extent. However, since this survey was a self-evaluation, the evaluation might have been somewhat lenient. Therefore, evaluations by local medical institutions, residents and specialized institutions are needed to confirm that the public health centers actually functioned adequately.

If fever clinics established outside medical institutions cannot provide treatment, residents must be informed of this situation.

(6) Roles of public health centers in public health practice

At a considerable number of public health centers, patients with no travel history to prevalent countries or areas were directed to fever clinics when it was considered necessary by public health centers or medical institutions. In addition, many public health centers obtained information from the government, the National Institute of Infectious Diseases, and prefectural government headquarters, whereas a notable number of public health centers in the Kinki and other districts obtained information from the CDC, WHO, etc.

The new influenza outbreak affected all of Japan, but problems with the measures used to manage the situation varied depending on local conditions, the resources of public health medical services, and the characteristics of residents and local societies. With respect to local

problems, public health center directors are expected to be proactive: to not just wait for instructions from the government and prefectural government headquarters, but to respond to local situations and medical practices, listen to opinions, and consider solving problems by themselves or delegating information to concerned organizations.

The Japanese Association of Public Health Center Directors should also summarize the opinions of public health centers and convey this information to the government.

4. Evaluations of and proposals for the initial measures of prefectural government headquarters in Japan

(1) Structure of headquarters

The headquarters should not operate from the manual automatically, but should make decisions regarding measures promptly and appropriately, according to changes in the measures by the government and the local situation, and should provide information to the government if necessary. To do this, the departments involved in health crisis management must be reinforced, including the placement of physicians on staff.

In addition, the preparation of a BCP is needed for future events.

(2) Support for public health centers

Timely information exchange and cooperation with public health centers is needed. In addition, the necessary authority should be given to public health centers to enforce measures appropriate for actual situations and to consolidate local medical systems.

In particular, a system that immediately backs up the duties of public health centers, such as fever consultations, should be considered for situations in which an abrupt increase in the duty burden occurs, like in the Kinki district.

5. Evaluations of and proposals for the initial measures of the government in Japan

(1) Uncertainty of evidence in health crisis management

The new influenza management led to considerable confusion, partly because the pathogenicity of the influenza differed from that shown in the action plan.

Since health crisis management affects human life and health, measures often have to be designed and carried out based on insufficient predictions of the situation and evidence. For example, in the new influenza management, the pathogenicity of the virus was initially unknown; additionally, the importance of aggravation of symptoms caused by pneumonia and encephalopathy in children was only revealed after some time.

The administration has learned from the history of public health, such as Minamata disease, drug-induced AIDS, and preventive vaccination, that it can be subjected to social and legal sanctions in situations where the damage to public health increases as a result of insufficient societal measures is subsequently revealed. Therefore, when the degree of appropriate measures is unclear, the initial plans and measures might be excessive and hardly be decreased and adjusted.

However, since public health measures for infectious disease management include those affecting fundamental human rights, such as personal liberty, restriction of human rights should be weighed against social benefits, more carefully than social and economic measures.

(2) Change in measures

If measures for health crisis management are enforced based on insufficient prediction and evidence, the prediction may turn out to be incorrect, the situation may change, or problems accompanied by the measures may subsequently arise in the actual management. Therefore,

the administration should continually reconsider the measures and correct them immediately, if necessary, without self-congratulation. The new influenza action plan also states “corrections should be made in a timely and appropriate manner”.

To control this prevalence, resources were initially directed strictly to shoreline operations. With respect to the domestic outbreak, only an increase in cryptogenic acute respiratory illness was reported, and the management of group occurrences of influenza-like diseases was not undertaken. As a result, the management of group occurrences was insufficient and, in retrospect, may have been unbalanced. In addition to the surveillance of group occurrences, PCR examinations and case definitions should be considered for patients with no travel history to foreign countries, even during the outbreak phase in foreign countries, in the future.

Furthermore, changes, reductions or the removal of planned measures according to changes in the situation were not necessarily done promptly. From the view point of personnel involved in the actual management, for example, when the relatively low pathogenicity was revealed and the infection was spread only little by little, the shoreline operations should have been simplified after the occurrence of domestic cases, hospitalization measures should have been discontinued at the beginning of June, and active epidemiologic investigation during the summer season should have been simplified in areas where the infection had already spread widely. These changes should have been made from the viewpoint of respect for human rights and the appropriate distribution of public health medical resources. In addition, with respect to requesting intensely exposed persons to stay at home, although this measure became unnecessary according to the actual situation observed by government administrators, the practical guidelines of the government were not changed for quite some time and should have been removed earlier.

Some respondents were of the opinion that the new influenza should have been managed

and legally positioned in the same manner as seasonal influenza. However, the effects of the new influenza cannot be regarded as identical to those of seasonal influenza, and the disclosure of information, which is provided for by the law, and other measures peculiar to the new influenza were necessary, to some extent.

In the future, established plans and policies should be changed or adjusted promptly and flexibly as information on the new influenza accumulates and changes in the situation occur. In addition, procedures for making such changes should be established in advance.

Regarding the reason for the delay in revising the measures, whether the communication among various government personnel was sufficient needs to be determined. For example, with respect to the stay-at-home policy for intensely exposed persons described above, there was a discrepancy in the opinions of the government. In addition, after the group occurrences in Japan, the contents of the practical guidelines differed from those of the action plan, and the action plan or phase was not revised. In the future, a greater effort to share information within the government, including the concerned ministries and government offices and the Ministry of Health, Labour and Welfare, should be made.

(3) Understanding the actual management situation

When measures are designed by the administration, they should be enforced or changed based on the understanding of the situation and the opinions of public health and medical practitioners. Although the government administrators might have been particularly busy during the early stages, their management based on the actual situation of public health and medical practice was insufficient.

On the other hand, the opinions raised by public health and medical practitioners are not always appropriate, and clinical experts are not necessarily experts on measures for health

crisis management. Government administrators should understand the actual situation of public health and medical practice, listen to opinions, make decisions to adopt or reject measures based on their knowledge and experience with medicine and administration, translate these measures into systems, and design measures for the desired direction.

At the expert advisory meeting, which was held before the outbreak of the new influenza, public health center directors participated in the meeting and played a role in deciding the guidelines. An advisory committee held after the outbreak of the new influenza was mainly composed of researchers and academic societies of clinicians. However, government administrators should obtain a comprehensive perspective on the actual situation by participating in the committee of personnel involved in the actual management, such as clinical physicians and public health center directors, or by regular information exchanges between the government and the Japanese Association of Public Health Center Directors.

(4) General evaluations of the measures

Although several problems occurred, as described above, the number of seriously ill patients and casualties to date has not been very large in Japan, compared with various countries in Europe and North America. The preparations of the government in establishing an action plan in advance and the good access of the public to medical services and medicines are thought to be responsible for this trend. Furthermore, the management according to the action plan undertaken by public health systems including public health centers, under the instruction of the government, might have helped to delay the spread of infection to some extent.

The extent to which the objectives established in the action plan were achieved in Japan, such as “to suppress the spread of infection as much as possible and to minimize health damage”, should be evaluated and compared with the situations in other countries in the

future.

(5) Appropriate information provision

Particularly during the early stages of the outbreak, public health centers and medical institutions were unable to obtain accurate information from the government and, in addition, a government website was not prepared. Therefore, inquiries from residents about reported information could not be answered accurately. The government should transmit information to public health centers, medical institutions and the public more accurately and promptly. To do this, communication lines must be established and press release data and clerical notices should be posted on a website immediately and sent by e-mail to public health centers and other organizations.

In addition, when clinical notices about measures are provided or measures are published on the website, the directions for each measure should be clearly and thoroughly explained, such as plainly revealing the background for the adoption of such measures, to provide meaningful information. In press conferences, information should be given in a calm manner, and references to measures made by local governments should be confirmed by directly contacting the local government in question.

(6) Development of infrastructure for health crisis management measures

Measures for managing a health crisis, such as the spread of an infectious disease, are needed to protect peoples' lives and safety. Thus, the budget and personnel of the National Institute of Infectious Diseases and other research groups should be strengthened, with communication with the CDC in the US and similar institutions in Europe and China to promote research, exchange information, train personnel and technical support for local governments, and

provide support for the design of national policies.

In addition, although various data was obtained from Europe and North America, much of the evidence, such as in the area of clinical epidemiology, was not obtained in Japan, and further epidemiologic investigations and case studies are needed.

Furthermore, to reinforce measures for health crisis management, the government should consider increasing budget and personnel support to public health centers and local medical institutions.

(7) Relationship between government and local governments with regard to duties

In the future, which areas require a unified government policy and which areas should be left to the discretion of prefectures must be determined in view of the various problems encountered during each phase. One way of thinking is that the government should establish only fundamental policies and that the management details should be decided by the prefectures according to the actual situation. To do this, the ability of prefectures to design appropriate measures must be strengthened.

In addition, one of the background factors responsible for the delay in the start of domestic measures and the difficulty in defining cases was that the Institute of Public Health's resources for conducting PCR examinations were limited and, in some districts, examinations were only performed for some influenza cases. The administration should understand this limitation of clinical practice and provide for flexibility in the selection of examination subjects according to the situation in local areas.

Furthermore, to support the preparation of BCP for public health centers, concrete legal or support system measures for the discontinuation and simplification of various duties at public health centers should be considered.

Concerning the closure of schools, the government should consider this situation in cooperation with the ministries and government offices concerned and establish a clear policy.

With respect to health surveillance, the rate of performance for people who entered Japan and the number of discovered patients should be investigated and inspected in a separate study.

Appendix

“Evaluation and proposals for public health management of new influenza A virus (H1N1)”
(Research representative: Prof. Toshiyuki Ojima, Department of Community Health and Preventive Medicine, Hamamatsu University School of Medicine)

A report by the Group for the Evaluation and Proposal of Strategies for Managing New Influenza Viruses in Public Health Centers and Prefectural Government Headquarters
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Part of the Japanese Association of Public Health Center Directors Cooperation Project

A. Objective

The initial management conditions at public health centers and prefectural government headquarters throughout Japan were recorded as fundamental data. In addition to an evaluation of the management strategies used to date, possible situations that could occur in the future were also investigated and measures for managing new influenza outbreaks quickly and appropriately and for preventing social disorder were proposed.

B. Methods

1. Questionnaire survey of public health centers

A draft of the questionnaire was presented on the website of the Japanese Association of Public Health Center Directors from August 3 to August 10, and opinions were invited.

The questionnaire forms were sent by e-mail to 510 public health center directors throughout Japan on August 14 . The public health center directors were asked to complete the questionnaire entitled, “Investigation 1: for public health center directors” by themselves or to approve the responses. “Investigation 2: for health policy administrators” was supposed to be answered by health policy administrators in consultation with the public health center directors, and the submission of data for any examples that were given was requested. If the exact numbers were unknown, approximate numbers were requested. The answers were returned by e-mail.

2. Questionnaire survey of prefectural government headquarters

Questionnaires requesting information on the numbers of patients, medical service system improvements, and school closures were sent by e-mail to 111 divisions in charge of infectious diseases in prefectures and large cities with public health centers, such as government-designated cities (excluding Tokyo’s 23 wards), in late August. The answers were collected by e-mail.

3. Investigation

Investigation conferences for concerned persons were held on August 17, November 22 and December 1. In addition, opinions were exchanged at the general meeting of the Japanese Association of Public Health Center Directors on October 20.

Based on the survey results collected from the public health centers and prefectural government headquarters, the strategies of local governments for managing the new influenza and unanticipated problems were clarified. In addition, the measures used by the government and local governments to manage the new influenza were evaluated, and future management

strategies were investigated.

C. Results

1. Results of questionnaire survey of public health centers

To improve the response rates, two requests for a response to the questionnaires were sent by e-mail; the final deadline for all responses was the end of September. The response rates were 66% for the questionnaire intended for the public health center directors and 65% for the questionnaire intended for the health policy administrators, including unsigned responses. The response rates for the questionnaire intended for the public health center directors were 67% for public health centers in prefectures, 59% in designated cities, 73% in core cities, and 48% in Tokyo's 23 wards.

The results of the survey of the directors (mainly evaluations) and the survey of the health policy administrators (mainly facts) are collectively described below.

(1) Preparation before the outbreak of the new influenza

In response to a question asking whether the concerned staff had read the new guidelines before the outbreak of the new influenza, 87% answered that they had “read it thoroughly” or “read it relatively thoroughly”.

Among the comments that were received, some respondents reported that the advance preparation at public health centers was useful, but others reported that the advance preparation had led to some confusion because the preparation was intended for highly pathogenic viruses of influenza.

(2) Staff and system at public health centers

On average, 64 staff members were employed by each public health center. Of these staff members, 1.8 were physicians or dentists, 16 were public health nurses and 24 were technicians. Meanwhile, an average of 45 staff members were employed by each prefectural public health center.

Overall, 66% of the public health center respondents reported that the number of public health nurses was “insufficient” or “somewhat insufficient”, while 63% reported that the number of physicians was “insufficient” or “somewhat insufficient”. These rates of insufficiency were higher in the Kinki district.

Among the comments that were received, some respondents reported that the staff members had to work very hard. A notable number of respondents reported that a heavy burden was placed on staff members because of shortages in staff members and physicians at public health centers, and they felt that the number of public health center staff members, including professional staff members, needed to be increased to cope with heavy burdens in the future. Regarding cooperation within the public health centers, the respondents reported that the staff members were able to perform their duties well when they cooperated with each other, whereas the burden on the staff members was heavy when a lack of cooperation existed. The respondents also reported that the public health center directors were unable to play a sufficient role, and that cooperation within public health centers and the management system need to be reinforced in the future.

(3) Business continuity of public health centers

In response to a question asking whether the public health center had prepared a business continuity plan (BCP) prior to the new influenza outbreak, 71% responded that they had “not prepared” or “somewhat not prepared” a BCP. Overall, 44% of the public health centers

reduced, discontinued or postponed some of their duties after the new influenza outbreak, while 19% did not consider doing so.

Among the comments that were received, some respondents reported that they felt the preparation of a BCP was needed in the future.

(4) Cooperation between public health centers and prefectural government headquarters

Overall, 48% of the public health centers received outside support in the form of additional staff members. Among the public health centers that received outside support, 36% received staff support from prefectural government headquarters or other offices, 39% received support from within integrated organizations other than public health centers, and 25% received support from temporary staff members.

Among the comments that were received, some respondents reported that cooperation between the public health centers and prefectural government headquarters was useful for some public health centers. On the other hand, other respondents reported that support from and cooperation with the prefectural government headquarters and other organizations were insufficient, and some public health centers encountered problems in situations where decisions were made not by the public health centers, but by the prefectural government headquarters. Some respondents reported that cooperation with and support from the prefectural government headquarters and other departments needed reinforcement and that public health centers needed to be given more authority.

(5) Cooperation with local organizations, such as municipalities and local medical associations

Overall, 97% of the public health centers provided advice and information, hosted meetings,

or provided training to municipalities (other departments, in the case of municipal public health centers). Meanwhile, 96% provided advice and information or hosted meetings for medical associations, although the rate was slightly lower in designated cities.

In the case of prefectural public health centers, when support for municipalities was self-evaluated, 78% responded, “it worked well” or “it worked relatively well”. In the case of municipal public health centers, when cooperation with prefectural government headquarters and prefectural public health centers was self-evaluated, 57% of the public health centers in designated cities, 83% in core cities and 82% in Tokyo’s 23 wards responded, “it worked well” or “it worked relatively well”.

When cooperation with local medical associations was self-evaluated, 85% of the public health centers responded, “it worked well” or “it worked relatively well”. All the public health centers in Tokyo’s 23 wards responded, “it worked well” or “it worked relatively well”.

Among the comments that were received, some public health centers reported that cooperation with and the provision of information to local organizations such as medical associations were useful. On the other hand, other public health centers experienced problems in cooperation with and providing information to local organizations such as municipalities, and some had problems cooperating with core cities and prefectures. Some respondents reported that cooperation with concerned organizations, such as municipalities within the territory of the public health center, needed to be reinforced in the future.

(6) Availability of information

In response to a question asking whether information required for management purposes could be obtained from information sources, 70% of the public health centers responded, “it was obtained sufficiently” or “it was obtained somewhat sufficiently”. All the public health

centers in Tokyo's 23 wards responded, "it was obtained sufficiently".

In response to a question asking which websites were particularly useful for the management of this new influenza, the highest proportion of respondents (70% or more) selected the websites of the Ministry of Health, Labour and Welfare and the National Institute of Infectious Diseases. Secondly, 20% or more selected the websites of mass media, the Center for Disease Control and Prevention (CDC), prefectural government headquarters, and the Japanese Association of Public Health Center Directors. Among Tokyo's 23 wards, the website of the Tokyo Metropolitan Government was selected more often than that of the Japanese Association of Public Health Center Directors. The website of the Ministry of Health, Labour and Welfare was selected less often in the Kinki district, and the websites of the WHO and CDC were selected more often in the Kinki and Kyushu/Okinawa districts.

Among the comments that were received, some respondents reported that information from the government, prefectural government headquarters, and the National Institute of Infectious Diseases was not provided promptly; that information was not provided promptly compared with that available from the mass media; and that more information on findings and measures was needed.

(7) Health surveillance of people entering Japan

On average, the maximum number of staff members in charge of health surveillance (including outside support staff) each day was 5. Health surveillance was conducted for an average of 189 people at each health center, but 70% of the public health centers conducted surveillance for less than 150 people. Overall, 65% of the public health centers conducted daily health surveillance for each subject until the last day of the early stage.

In response to a question asking whether cooperation with quarantine worked well in the

health surveillance, 76% responded, “it worked well” or “it worked relatively well”, although the rate was lower in Tokyo’s 23 wards. In response to a question asking whether problems or difficulties were encountered when contacting or observing subjects under surveillance, 75% answered that “there were no problems” or that “there were no major problems”.

(8) Fever consultation

On average, the maximum number of staff members in charge of fever consultations (including outside support staff) each day was 9. The average number of consultations was 1,000 as of May, 519 in June, and 228 in July. The Kinki district had more consultations as of May, and the Kanto-Koshinetsu district had more consultations in June and later. During the peak period of fever consultations, 93% of the public health centers received consultations on every Saturday, Sunday and national holiday. During the peak period of fever consultations, 62% of the public health centers received consultations at night (24 hours) everyday at home, whereas the staff members had night shifts in 54% of the public health centers in the Kinki district. Among the comments that were received, some respondents reported that the burden on the staff was heavy, particularly during periods of numerous fever consultations.

When asked to evaluate the fever consultation centers, 92% of the respondents reported that “they worked well” or “they worked relatively well”, although this rate was somewhat lower (67%) in the Kinki district. When asked to evaluate the cooperation between fever consultation centers and fever clinics, 93% of the respondents reported that “it worked well” or “it worked relatively well”. Among the comments that were received concerning serious complaints and problems encountered during the fever consultations, some respondents mentioned the criteria used for medical consultations, the medical service system and consultation refusal by medical institutions, the fever consultation system, and insufficient

telephone lines.

(9) Fever clinics

The average number of fever clinics established within the territory of each public health center was 3 before the practical guidelines were revised in June, although 9 clinics were established in the Kinki district. Overall, 73% of the public health centers had 1-3 fever clinics, and 90% of the public health centers did not establish fever clinics outside of medical institutions (including surrounding areas). In the Kyusyu/Okinawa district, however, 17% of the public health centers established fever clinics outside of medical institutions. Among the comments that were received, some respondents reported that problems occurred when treatment was not available in fever clinics and when fever triage was performed outside of medical institutions, such as in public health centers.

Among the fever clinics, 85% were established within medical institutions (including surrounding areas) and were not attended by a physician from a medical association or other medical institution.

Overall, 87% of the public health centers had discussions with or requested medical personnel within the public health center's territory to establish fever clinics.

The average number of outpatients with fever was 48 in May and 23 in June, and these numbers were larger in the Kinki district. In response to a question asking whether patients with no travel history to countries or areas where infection was prevalent were directed to fever clinics according to the criteria of the public health centers before the revision of the practical guidelines in June, 49% answered that "they were not directed", 32% answered that "they were directed if the public health center considered it necessary because of clustering", and 17% answered that "they were directed if requested by medical institutions (excluding the

above)". Among Tokyo's 23 wards, a higher proportion of respondents answered that "they were directed if the public health center considered it necessary because of clustering".

Concerning the measure in which "the government instructed the establishment of fever clinics but then shifted its policy toward medical examination and treatment at general medical institutions", 68% of the public health centers responded, "it was good at first, but the fever clinics should have been abolished earlier", while 22% responded, "it was generally reasonable". However, 9% answered that "the fever clinics were unnecessary, even initially", and this rate was slightly higher in the Kinki district.

In response to a question asking whether fever clinics should be abolished and medical examination and treatment performed at general medical institutions in the future, 75% answered that "medical examination and treatment should only be performed at general medical institutions", while 21% answered that "medical examination and treatment should be performed at both general medical institutions and fever clinics". The number of respondents who answered that "medical examination and treatment should only be performed at general medical institutions" was slightly higher among Tokyo's 23 wards and in designated cities, the Kinki district and the Tokai/Hokuriku district and lower in the Hokkaido/Tohoku district. Among the comments that were received, some respondents reported that outpatient medical systems needed to be secured and improved and that education regarding the prevention of nosocomial infections was needed in the future.

(10) Inpatient medical care

Before the practical guidelines were revised in June, the number of hospitals within the territory of each public health center that were capable of receiving patients requiring hospitalization was 1.2 on average. Overall, 49% of the public health centers had 1 hospital,

and 29% had no hospitals. On average, the maximum number of available inpatient beds in hospitals within the territory of each public health center was 16, but 70% of the public health centers had less than 10 inpatient beds within their territory.

Overall, 79% of the public health centers had discussions with or requested hospitals within their territory to secure inpatient medical institutions that could receive inpatients. This rate was slightly lower in designated cities and among Tokyo's 23 wards. Overall, 86% of the public health centers answered that inpatient beds had been "sufficiently secured" or "somewhat sufficiently secured" for the number of patients that they had treated to date.

However, 65% answered that the inpatient beds were "not sufficient" or "somewhat not sufficient" for future inpatients with severe conditions. Among the comments that were received, some respondents reported that medical care systems for patients with severe conditions and inpatients needed to be secured and improved and that a larger number of physicians needed to be secured in the future.

(11) PCR examination and the number of confirmed cases

On average, 39 PCR examinations were performed as of the end of July.

The average number of confirmed cases as of the end of July was 9 for solitary infections and 6 for group infections. These numbers were larger in the Kinki district.

(12) Active epidemiologic investigation, preventive medication and cluster surveillance

On average, the number of intensely exposed persons for whom active epidemiologic investigations were conducted as of the end of July was 89. This number was larger in the Kinki and Kanto-Koshinetsusei districts.

On average, 10 cases of preventive medication were performed as of June 19 (before the

government changed its policy regarding preventive medication in the revised practical guidelines), and this number was larger in the Kinki and Kanto-Koshinetsusei districts. In response to a question asking what principle was used to select subjects for preventive medication among the most intensely exposed persons prior to June 19, 39% answered “all intensely exposed persons” and 35% did not answer. In response to a question asking who provided the preventive medication prior to June 19, 43% answered “physicians in the public health center” and 43% did not answer.

Overall, 74% of the public health centers conducted cluster surveillance for all institutions and groups that had at least 2 type A-positive patients at the time of the investigation. In response to a question asking which subjects were included in active epidemiologic investigations, 31% answered “definite patients in the group with the occurrence and some persons who were intensely exposed to patients with possible symptoms” and 30% answered “definite patients in the group with the occurrence and all the persons who were intensely exposed to patients with possible symptoms”.

With respect to commuting to work and school, in response to the question asking whether the public health centers requested that intensely exposed persons stay at home at the time of the investigation, 65% of the public health centers answered that they “did not request the person to stay at home unless they had symptoms”, and 31% answered that they “requested the person to stay at home, although a written request was not made”.

To the question concerning the enforcement of cluster surveillance and active epidemiologic investigation, 55% answered that they were “capable of appropriate enforcement” or that they were “somewhat capable of appropriate enforcement”. Among the comments that were received, some respondents reported that the burden of cluster surveillance and active epidemiologic investigation is heavy and should be reconsidered in the

future.

(13) Other measures

Among the comments that were received, some respondents reported that residents needed to be educated with regard to the prevention of infection and governmental policies regarding vaccines in the future.

(The following issues were frequently mentioned in the comment sections but were not included in the preceding section.)

(14) Government management

In the general evaluations, some respondents reported that the government management of the situation was good, while others reported that the process for determining policies should be improved.

Among these comments, many respondents reported that the revisions to the measures were delayed and that the measures should have been reconsidered more promptly. In contrast, some respondents reported that revisions to the measures should have been considered more carefully. On the other hand, not many criticisms that the action plan established in advance was inappropriate were made. In addition, some respondents reported that the phase should have been defined as a pandemic phase, while others reported that since the new influenza virus did not differ from seasonal influenza virus with regard to its low pathogenicity, the measures and legal positioning for the new influenza should have been similar to those for seasonal influenza.

Regarding the action plan, some respondents reported that the action plan established in advance was useful, but others reported that the plan should be reconsidered.

Regarding the relationship between the government and the actual management of the situation, some respondents reported that the government must understand the actual management situation needed to carry out the measures. In addition, some respondents reported that the government should show unified measures, whereas others reported that the government should leave the necessary measures to each prefecture's discretion.

Regarding the information provided by the government, the following opinions were expressed: the information should be accurate and easy to understand; the information on measures should be provided to public health centers promptly before it is provided to the mass media; more information on the prevalence in Japan and foreign countries and on scientific findings should be provided; and the Minister sometimes lost his presence of mind in his speeches.

Many respondents reported that a budgetary provision should be made to consolidate the medical systems and public health center systems.

(15) Management of prefectural government headquarter personnel

The following criticisms were expressed regarding the management of the prefectural government headquarter personnel: measures appropriate to the local area conditions and actual management situation should be taken; prefectural decision-making and information provision were not prompt; organizations and personnel (including physicians) need to be strengthened within the prefecture; public health centers have no authority to make decisions and therefore were unable to work optimally; and cooperation between the prefecture and public health centers established by cities was problematic.

(16) National Institute of Infectious Diseases

The following comments were made regarding the role of the National Institute of Infectious Diseases: information on scientific findings and prevalence should be provided promptly and appropriately; technical support and research on virus inspection should be performed; training should be made available; and the government should increase the personnel and budget available to the institute.

(17) Management of mass media

The mass media functioned as a useful information source, as described in (6). On the other hand, some respondents commented that mass media reports should be reviewed from the viewpoints of appropriateness and consideration of human rights.

(18) Japanese Association of Public Health Center Directors and this research group

Some respondents reported that requests to and evaluations of the government should be made.

2. Results of questionnaire survey of prefectural government headquarters

Responses were obtained from 83 prefectures between September 3 and October 28 (response rate of 74.8%).

The numerical values and other data are based on the situation as of August 24, 2009.

The main results are described below.

(1) PCR examination and number of confirmed cases

Fifteen PCR examinations per population of 100,000 were performed. Of these, the number of confirmed cases was 8 (57%).

The number of group occurrences per population of 100,000 was 3. Of these, the number of confirmed cases was 3 and the number of cases with possible symptoms was 11.

The number of PCR examinations that can be performed in one day was 46.

Among the comments that were received, problems with the examination operators, the recovery and transport of samples, and medical expenses and instruments were pointed out.

(2) Business continuity plan and manual

Only 29% of the respondents had established a business continuity plan (BCP).

Among the comments that were received, some respondents noted that measures in the case of low pathogenicity needed to be considered.

(3) Medical systems

The average number of established fever clinics attached to medical institutions was 32 in prefectures and 6 in cities with public health centers prior to the practical guideline revisions in June. The average number of secured inpatient medical institutions in prefectures was 18 hospitals with 322 beds before the practical guideline revisions in June and 55 hospitals with 4308 beds during the pandemic phase at the time of the investigation.

Concerning the medical system for special patients, many children and dialysis patients were treated by their family doctors; in contrast, the medical system available to pregnant women was uncertain in many cases.

Material support for hospitals included protective equipment, artificial respirators, and room dividers, in decreasing order of abundance.

(4) Closure of schools and other facilities

Overall, 52% of the respondents had established criteria for closing schools and other facilities.

(5) Other issues

Among the comments that were received, some respondents reported that information provision to local governments was insufficient or slow, and some concerns regarding organizational problems within prefectures were noted.

D. Discussion: Evaluation and proposals for initial management of new influenza

In the future, the final proposals should be considered based on the securement of medical systems after the initial stage, investigations of preventive vaccination, measures by the government and press, investigations of the human rights of infected patients, and inspections and opinions by personnel other than those employed at public health centers.