Responses of the National Center for Global Health and Medicine as a Designated Medical Institution for Specified Infectious Diseases

Norio Omagari

Disease Control and Prevention Center

National Center for Global Health and Medicine





Responses to suspected cases of infectious diseases that may be international menaces in the National Center for Global Health and Medicine



Ebola hemorrhagic fever

Date of occurrence	Travel destination	Diagnosis	
October 27, 2014	Liberia	Undisclosed	
November 7, 2014	Liberia	Acute pharyngitis (GAS)	
December 29, 2014	Sierra Leone	Acute paranasal sinusitis	
January 18, 2015	Sierra Leone	Influenza B	
MERS			
Date of occurrence	Travel destination	Diagnosis	
June 16, 2015	Korea	Acute bronchitis * Direct consultation with our Ho	ospital
January 3, 2016	UAE	Influenza B * Direct consultation with our Ho	ospital
January 5, 2016	Dubai	S. pyogenes pneumonia, bacter	remia
February 4, 2016	Qatar	Acute upper respiratory tract inf	lammatior

OCTOBER 27

Request for the reception of transfer of a suspected case of Ebola virus disease from the Tokyo Airport Quarantine Branch Office of Tokyo Quarantine Station

Before the Arrival of the Case

- A vehicle for picking up samples was confused with the vehicle for patient transportation, and misinformation of patient's arrival was given (unexpected)
- ➤ Communication at distance of 10 km from the hospital before arrival → It takes 15-20 minutes to arrive
- Waiting for arrival with PPE on, but physical strength was being lost with time

"When wearing full PPE, active time should be limited to 30 minutes ..."

"Narrow view, sealing, heat, sweat, fogged glasses ..."



At the Arrival of the Case

- As the suspected case wore full PPE, it was difficult to distinguish accompanying quarantine officer from the patient (unexpected)
- As the hospitalization had not been explained to patient, but only transportation just for examination, it turned into an argument (unexpected)
- Brief history taking about travel history, activities at the site, contact history with patients with Ebola hemorrhagic fever, preventive medication of Malaria
- Managed to reach an agreement to be hospitalized in the New Infectious Disease Ward
- "Already drenched in sweat, fog on glasses gets thicker" (unexpected)





- After about 1 hour of active time, once left the patient's room
 - "The effective field view is just a size of 1 yen coin, lower left corner of glasses ..." (unexpected)
- Threat of infection for work to remove PPE for which level of difficulty is more than that in training due to sweat during activity (unexpected)

After the Hospitalization of the Case

- Passed over the specimen for Ebola PCR to the person in charge of transfer
- As there was no means of access between the testing laboratory and other rooms, put on PPE again to get the results of biochemical examination and visually memorized them





Official Press Release of the Ministry of Health, Labour and Welfare (at the time hospitalization)

- Patient is a man of 40 years of age
- He has a history of staying in West Africa and arrived at Haneda Airport this afternoon
- After arrival, he showed a symptom of fever, and was transferred to the National Center for Global Health and Medicine and now is under examination
- The result of examination will be announced when it is determined
- The result will be determined in the early hours of tomorrow
- * Age, nationality, profession, travel history details, return flight, and other personal information were revealed without the person's intent

At the Discharge from the Hospital of the Case

- ➤ After confirming the decline of fever in 2 days, conducted the second PCR test → negative
- What the person said at the time of discharge

Basic Idea for Transfer

Extract from MHLW/HSB Tuberculosis and Infectious Diseases Control Division Notification No. 0331001 issued on March 31, 2004 "Guideline for the Transfer on Patients with Infectious Diseases"

Key points:

- Prevent the spread of infection based on the characteristics of pathogens
- Consideration of human rights
- Transfer by appropriate materials and equipment
- Ensuring the security of those who are engaged in transfer

Reality of Transfer by Disease - Hemorrhagic Fever

- Longer travel distance than provided by common fire and ambulance services
- Diagnose whether the patient can be transferred or not
- Drains other than endotracheal intubation tube should be closed circuit
- When the patient is incontinent, insert urethral balloon catheter and use disposable diapers for fecal incontinence / melena
- It is desirable to pay attention to the use of a watershedding disposable gown, because it may lead to unexpected contamination due to the outflow of blood and body fluid

Reality of Transfer by Disease - Hemorrhagic Fever

- Regarding the vehicle for transferring the patient, it is desirable that the vehicle has a structure that can ensure measures to prevent the spread of infection.
- Cover equipment and wall surfaces with sheets and place hygroscopic sheets or non-woven material over an vinyl sheet on the floor so as not to expand the contaminated area due to hemoptysis or hematemesis, and dispose of whole set of these materials including vinyl sheet as contaminated waste after the transfer.
- When it is certain that there is contamination around the patient with hemoptysis, hematemesis, or incontinence, create a space for the patient with transparent vinyl to prevent the exposure of the accompanying transfer staff to the patient's space for a long time.
- Regarding wall and floor surfaces of the patient space in the vehicle, wipe clean with gauze or other cloth initially, wipe again using hypochlorite disinfectant, and then wipe off with water.

Reality of Transfer by Disease – Hemorrhagic Fever

 As there is no preventive / therapeutic drug for hemorrhagic fevers other than Lassa fever, full attention should be given to infection.

(Note: An preventive medication of favipiravir is available for Ebola fever, and ribavirin is used for Lassa fever.)

• For those who had close contact with the patient, it is desirable to monitor health conditions for 3 weeks. It is necessary to prevent secondary infection due to sexual intercourse or other behavior during this period.



[Reference] Super ambulance

In addition that a capsule-style stretcher for the transfer of an infected patient (isolator) can be mounted using a hydraulic elevator (lift) from its rear door, the driving compartment is completely separated from the sick and wounded person's compartment by a bulkhead as a measure of infection control (extract from the website of Tokyo Fire Department)

Example: A model not being used now



- Hard type
- built-in stretcher capsule
- Reusable
- Difficult for medical practice
- \bigcirc Heavy and poor mobility
- \bigcirc Unstable and easy to fall down
- Hard to find a place to store the cover
- Many parts with projection cause a risk to destroy gloves

★ Stretcher capsules of this type were purchased in various locations in the SARS epidemic during 2012-2013; however, a lot of medical institutions stopped use of and disposed of them because turnover accidents, injuries, back pain, and other occupational injury and illness in staff happened during training in the Ebola epidemic in 2014.



Example: Type adopted in Tokyo Metropolitan and Quarantine Office



Custom-order type

DIF Trans-bag

- Soft type
- With handle parts, it is carried by several persons / A transport bag used even for a patient on a stretcher
- Disposable / reusable
- Rescue action from the outside of the bag is impossible
- There is a type with a control unit of negative / positive pressure
- Low price model



Case

A man of 45 years of age without any special history

[Major complaints] Fever, cough, respiratory discomfort

[Current medical history]

- X-8 day Transient fever
- <u>X-3 day</u> Visited the office of previous doctor with an awareness of cough, hoarseness, sore throat, and diarrhea

Diagnosis of gastroenteritis

<u>X-2 day</u> Returned to clinic due to protracted symptoms, fever of 39°C, Lowered SpO2.

Diagnosis of pneumonia, hospitalized and started to receive CFPM, SBT/ABPC

Case

- [Medical history] No special description
- [History of allergy] No
- [Life history] Occasional drinking, never a smoker, living with his wife
- [Sick contact] No clear history of contact (except that his wife had a cold)

[ROS]

- (+) Dry cough, hoarseness, sore throat, nasal discharge, diarrhea
- (-) Abdominal pain, nausea, and vomiting

<u>Case</u>

[Current medical condition] BT 39.6 BP 124/80 PR 102 SpO2 98 (Cannula 4L) RR 24

[Physical findings]

- Head and neck area: Redness of the pharynx, mildly swollen
- Breast: Lung A crackle was heard in left anterior chest to the back, wheeze (+), stridor (-)

No labored breathing

<u>Case</u>

[Blood test]

<blood cou<="" th=""><th><biolog< th=""><th>gical e</th><th>xamination></th></biolog<></th></blood>	<biolog< th=""><th>gical e</th><th>xamination></th></biolog<>	gical e	xamination>	
WBC	7600	CR	P	37.4 H
Neut	94.0	Na	9	137
Lym	3.0	К		3.5
Hb	14.6	Cl		100
Ht	43.8	BL	JN	13.6
Plt	15.2	Cro	е	0.87
<blood day<="" td=""><td>T-E</td><td>Bil</td><td>0.5</td></blood>	T-E	Bil	0.5	
		AS	T	24
рН	7.449	AL	T	19
pCO2	35.7	LD	Н	402 H
pO2	162.9	Gl	u	119 H
SaO2	99.1			

[Imaging test]



• Chest Xp (left: X-1 day, previous doctor; right: X+1 day)





Case

A man of 45 years of age without any special history

[Major complaints] Fever, cough, respiratory discomfort

[Current medical history]

X-15 day Travel to Dubai, Morocco, contact with a one-hump camel

- X-8 day Transient fever
- <u>X-3 day</u> Visited the office of previous doctor with an awareness of cough, hoarseness, sore throat, and diarrhea
 Diagnosis of gastroenteritis
- <u>X-2 day</u> Returned to clinic due to protracted symptoms, fever of 39°C, Lowered SpO2, raised inflammatory response. Diagnosis of pneumonia, hospitalized, and started to receive CFPM, SBT/ABPC
- Xday Transfer to our Hospital with suspected MERS

Center Hospital of the National Center for Global Health and Medicine

Hospital Infection Risk Management Team

Leader: Hospital Director

Members: Chairperson, General Administrative Director, Manager of General Affairs, Research Medical Practice Manager, Director of Nursing, Director of the Disease Control and Prevention Center (also the Chief of Medical Practice Team)



Center Hospital of the National Center for Global Health and Medicine

Infection Risk Management Medical Practice Team

Ver1.0: as of October 16, 2016

Standard response in hospital management section



Instruction / Communication System within the New Infectious Disease Ward (from opening the Ward to reception of the patient)



- * To prevent confusion, those who are not on the figure above should comply with the following items:
- 1. Don't join the medical practice without having the permission of the Chief of medical practice.
- 2. Don't talk to or ask for the members of medical practice team or hinder the activities of medical practice.
- 3. Don't give instructions to the members of medical practice team without permission of the Chief of medical practice.

Work Shifts for New Infectious Diseases Ward Proposal on October 27, 2014

New Infectious Diseases Ward – Shift Sheet					
	Monday, October 27	Tuesday, October 28	Wednesday, October 29	Thursday, October 30	Friday, October 31
0:00-8:00		Kutsuna / Shinohara	Kutsuna / Shinohara	Kutsuna / Shinohara	Kutsuna / Matono
8:00-16:00		Takeshita / Muto	Takeshita / Muto	Takeshita / Fujiya	Takeshita / Shinohara
16:00-24:00	Kato / Matono	Kato / Matono	Kato / Matono	Kato / Muto	Kato / Fujiya

Work Shifts for New Infectious Diseases Ward Proposal on January 18, 2015

- Based on a 12-hour shift -

	January 18		January 19		January 20
	13:00-22:00	22:00-10:00	10:00-22:00	22:00-10:00	10:00-22:00
New Infectious Diseases Ward 1	Hayakawa	Takeshita	Kutsuna	Hayakawa	Takeshita
New Infectious Diseases Ward 2	Matono	Fujiya	Integrated Infectious Diseases Residents	Matono	Fujiya
Ward / Consultation			Yamam	ioto / Furukawa	/ Fukui
Outpatient			Kanagav	va / Mawatari /	Takeuchi
On call	Furukawa	Furukawa			

Response to Emergency Situations of Infectious Diseases - Operation Checklist for the On-Site Director

Name of emergency situation:

Name of emergency	310
Person in charge:	

Ferson in charge.			
	Item No.	Check	ltem
	1		Start to make a note sequentially for the response. Surely write down the date and time.
	2		Ask Quarantine Office and Public Health Center for further information.
	3		Report the information from Quarantine Office and Public Health Center to the Director of Hospital as a first report.
	4		Decide the opening of the New Infectious Diseases Ward
	5	<u> </u>	Notify the Director of Hospital of the opening of the Ward
	6	<u> </u>	Print out the system of instruction and communication in the New Infectious Diseases Ward
	7	<u> </u>	Print out the protocol of Abinan
	9		Think out the protocol of Angent.
	0		Finit out the instal control of executives (posted on the website).
	9	<u> </u>	Prepare a time sheet for temporal record.
Initial responses	10		Ask quarantine Unice and Public Health Center for further information.
	11		Report the information non Qualantine Once and Public Ream Center to the Director of Hospital as a inst report.
	12		Ask for the establishment of the Units Management relacionaries.
	13		Confirm with the Crisis Management Headquarters that all information should be submitted by the Ministry of Health, Labour and Weitare.
	14		Notify the MHLW of the centralization of information management.
	15		Get in touch with Research Medical Practice Manager (if absent, with Director of Planning and Management).
	16		Get in touch with the duty person of Testing Department.
	17		Get in touch with the duty person of Imaging Diagnosis Department.
	18		Get in touch with the Director of Pharmaceuticals.
	19		Get in touch with the Director of Nursing.
	20		Get in touch with the General Administrative Director.
	21		Prepare an organizational chart for the operation of the New Infectious Diseases Ward.
	22		Prepare a doctors' shift sheet.
	23		Ask Nursing Department to prepare a shift sheet.
	24		Call out necessary number of operation staff for the New Infectious Diseases Ward.
	25		Ask those who don't join the operation of the New Infectious Diseases Ward to get out of the New Infectious Diseases Ward.
	26		Ask ACC and Respiratory Medicine Department for the division of work on consultation.
	27		Prepare the medical chart.
	28		Ask Information Department to lock the medical chart.
Preparation of the	29		Send Information Department the list of persons who can access the electronic health record
Ward	30		Using a gag order to medical practice staff
waru	31		Don't write down the contents of explanation perspective of examination perspective of discharge on the medical chart (write down only the contents of medical practice)
	32	<u> </u>	Instruct that relevant documents should be stored in a single name of examining or the method of the method of the method of the method.
	32		Instruct that relevant documents should be sho
	34		Instruct to prepare a journal of the wards.
	25		Instruct medical practice start of mean management during duty.
	35		Shut down the door connecting travel clinic and the we intectious Diseases ward.
	36		Contirm with the Ward about the time required to open the Ward.
	37		Confirm the procedure of clinical trial of Abigan.
	38		Confirm with the Pharmaceutical Department about the stock of Abigan.
	39		Request the MHLW liaison staff to remain on duty at all times and exchange contact addresses (mobile phones).
	40		Request quarantine liaison staff to remain on duty at all times.
External	41		Confirm with Quarantine Office or Shinjuku Public Health Center about the way to hand over the specimen.
communication	42		Coordinate with Quarantine Office or Shinjuku Public Health Center about the arrival time at our Hospital to take over the specimen.
	43		Notify Quarantine Office or Public Health Center of the preparation completion of the acceptance when three-fourths of preparation for thawing is completed.
	44		Ask Quarantine Office or Public Health Center about the time of departure on site.
	45		Conduct body temperature checks twice a day during the period of health management for staff.
	46		Notify imaging diagnosis staff of the unnecessity of examination.
	47		Ask whether staff members know the "procedure for writing down the medical chart when implementing medical practice for suspected case of Class I infectious diseases."
Instructions to the	48		Prepare the address list of employees on duty.
Ward staff	49		When a patient is transferred from the Quarantine Office understand the behavior in the airplane
	50		Understand the health observation and contents of behavior in the Public Health Center
	51		Hold Ward conferences at 13:00 every day
	52	<u> </u>	Ack Einancial Denastment for in-boenital administrative affairs
	52		The result of examination shared by a patient and the test than released to the proce
Media countermeasures Measures for			The result of examination should be notified to the patient mist, then released to the press.
	54		Confirm the first report of press release from MHLW (then, get in touch with external medical institutions).
	55		Prepare explanatory document to the patient, family, and visitors, then post it.
	56		Prepare a notification of in-hospital newsletter.
	57		Confirm the discharge route of the patient.
	58		Set the time of discharge.
	59		Confirm the in-hospital discharge route.
aiscnarge	60		Confirm that no mass communication occurs at the exit of discharge.
	61		Confirm the time of discharge.
	62		Ask MHI W to submit a press release of discharge after the patient arrives at home
Measures for	62		Confirm the time of neutral procession of advinger and the patient and the advine.
restoring to the	64		Confirm the units of pacetice a different filling.
status quo	04		Communicated press refease of discribing in such million from Windows and a second sec
	65		Instruct the normalization of medical practice system (by email, etc.)

Response to Emergency Situations of Infectious Diseases - Operation Checklist for the On-Site Director

Name of emergency situation:

Person in charge:

	Item No.	Check	Item
	1		Start to make a note sequentially for the response. Surely write down the date and time.
	2		Ask Quarantine Office and Public Health Center for further information.
	3		Report the information from Quarantine Office and Public Health Center to the Director of Hospital as a first report.
	4		Decide the opening of the New Infectious Diseases Ward.
	5	0	Notify the Director of Hospital of the opening of the Ward.
	6		Print out the system of instruction and communication in the New Infectious Diseases Ward.
	7	٥	Print out the protocol of Abigan.
	8		Print out the list of contact of executives (posted on the website).
	9		Prepare a time sheet for temporal record.
Initial responses	10		Ask Quarantine Office and Public Health Center for further information.
	11	٥	Report the information from Quarantine Office and Public Health Center to the Director of Hospital as a first report.
	12		Ask for the establishment of the Crisis Management Headquarters.
	13	٥	Confirm with the Crisis Management Headquarters that all information should be submitted by the Ministry of Health, Labour and Welfare.
	14		Notify the MHLW of the centralization of information management.
	15	٥	Get in touch with Research Medical Practice Manager (if absent, with Director of Planning and Management).
	16		Get in touch with the duty person of Testing Department.
	17	٥	Get in touch with the duty person of Imaging Diagnosis Department.
	18		Get in touch with the Director of Pharmaceuticals.
	19	٥	Get in touch with the Director of Nursing.
	20		Get in touch with the General Administrative Director.
	21	٥	Prepare an organizational chart for the operation of the New Infectious Diseases Ward.
	22		Prepare a doctors' shift sheet.
1	23	٥	Ask Nursing Department to prepare a shift sheet.
-	24		Call out necessary number of operation staff for the New Infectious Diseases Ward.
	25	٥	Ask those who don't join the operation of the New Infectious Diseases Ward to get out of the New Infectious Diseases Ward.
	26		Ask ACC and Respiratory Medicine Department for the division of work on consultation.
	27	٥	Prepare the medical chart.
-	28		Ask Information Department to lock the medical chart.

Challenges in the Future

- 1. Medical Practice System
 - Securing of manpower and resources in medical institutions: System enabling an intensive treatment for 3-4 weeks
 - 2. Medical practice fees commensurate with cost
 - Is response possible with the staff of a single medical institution? : How about the division of labor among medical institutions or dispatch of relief staff within Japan
 - 4. Establishment of the means / methods of transfer

Challenges in the Future

- 1. Continuous discussion on the infection control measures for medical professionals
 - 1. Appropriate use of PPE
 - 2. Health management / Prevention after exposure
- 2. Treatment
 - 1. Establishment of standard treatment
 - 2. How to introduce new drugs, including unapproved drugs
 - 3. How to do to safely provide an invasive treatment
- 3. Preparation of temporary response to imported infectious diseases in general medical institutions
- 4. Considerations of patients' human rights, personal information

References

- IASR 36(6), 2015 [Special topic] Ebola hemorrhagic fever in West Africa, as of May 2015. <u>http://www.nih.go.jp/niid/ja/ebola/1096-idsc/iasr-topic/5716-tpc424-j.html</u>
- Narumi Hori, Norio Omagari "Infection Control Measures for Ebola Virus Diseases (EVD) in Medical Institutions" Medical Asahi (0919-7818) vol. 44-1; page. 28-29 (2015.01)
- Shiho Takaoka "Public Health Administration Key Words: Responses in Administration Division in Hospital for Suspected Case of Ebola Hemorrhagic Fever (commentary)" Public Health (0368-5187) Vol. 79-7; Pages 478-480 (2015.07)
- 4. Norio Omagari "Actuality of Medical Practice for Infectious Diseases: World Trends of Infectious Diseases" Journal of the Japan Medical Association (0021-4493) Vol. 143 Special version 2; Page S30 (2014.10)