

Program for the Specialist of
Healthcare-Associated Infection Control and Prevention
Knowledge Co-Creation Session



Sharing the Experiences of Ebola Outbreaks



National Center for Global Health
and Medicine, Japan
Bureau of International Health Cooperation



Japan International
Cooperation Agency

Executive summary

Health care-associated infections (HCAI) and related deaths, together with increased costs due to extended hospitalization and medical treatment, have become serious problems both in developed and developing countries.

As seen in cases of Ebola, hospitals can be high-risk places of infectious disease outbreaks. Notable example which is still fresh in our memory is the HCAI caused by medical personnel who were in charge of the treatment of the Ebola virus disease in West Africa, as a reminder of this urgent issue globally. However, the damage caused by these infectious diseases can be mitigated or minimized by thorough implementation of appropriate control measures. Moreover, improving the quality of HCAI control is urgently required in order to prepare for a future pandemic.

Japan International Cooperation Agency (JICA) and National Center for Global Health and Medicine (NCGM) have conducted a Program for the Specialist of Healthcare-Associated Infection Control and Prevention since 2003 for the hospital administrator and the person in charge of HCAI control in their respective institution, as well trainers to their staff regarding HCAI control.

Participants shall have opportunities in Japan to understand the principles and practices of HCAI control through a series of lectures, workshops and site visits, and moreover to formulate an action plan to solve the problems related to HCAI control in their respective countries and hospitals.

Leveraging the opportunity of the program, JICA and NCGM organized Knowledge Co-creation Session "Sharing the Experiences of Ebola Outbreaks".

As speakers, JICA, NCGM and participants of the above program from two countries (Liberia and Sierra Leone) made presentations on the Ebola Outbreak Response. Ebola outbreaks took away many health worker's lives. They talked about the reality of the frontline and how to protect their lives. JICA and NCGM discussed about the cooperation for Africa and response systems for Ebola patients.

More than 50 people participated in this session. Sharing the Experiences of Ebola Outbreaks led us to recognize the importance of preparedness for Ebola.

Lastly, we appreciate all participants and persons involved for their effort and collaboration for this successful session and we hope that the session would nurture mutual collaboration among participating countries and Japan by sharing knowledge and experiences in HCAI control now and in the future.

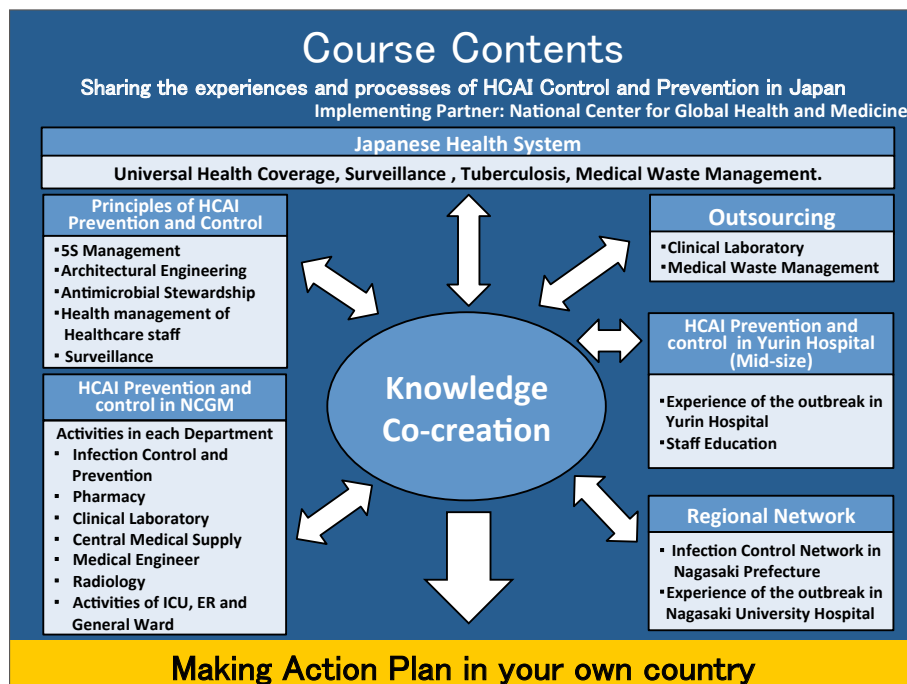
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I. Introduction

Jun Moriyama

Course Leader, National Center for Global Health and Medicine,
Bureau of International Health Cooperation



Mr. Moriyama: Ladies and gentlemen, now, we would like to start the Knowledge Co-Creation Program Sharing Experiences of Ebola Outbreaks. I'd like to welcome you all and thank you everybody for coming. My name is Jun Moriyama. I am in charge of course leader this program.

First of all, let me introduce the course program. This Ebola session is one of the JICA program for the specialist of Healthcare-Associate Infection Control and Prevention. Participants came from eight countries, Laos, Myanmar, Malawi, Zambia, Uganda, Tanzania, Liberia and Sierra Leone. This program aims to help the participants understanding and implement more effective policies and practices for healthcare-associated infection control and prevention in their own facilities. In this Program, participants will share experiences with each other including Japan. In 2014, West Africa has experienced the largest outbreak of Ebola. Many healthcare workers were also damaged by Ebola. We think these experiences are very important for the other participants and Japan. So we planned this session.

Now, I will introduce Dr. Sakurada, Bureau of International Health Cooperation. He is a chairman of this session. Please, Dr. Sakurada.

Dr. Sakurada: Good afternoon, everybody. I clearly remember, when I worked in this Institute of NCGM, we formed task force for Ebola virus disease and I studied what Ebola virus disease was. However, I was dispatched to Pakistan as a JICA expert for starting Immunization Project. So I did not have any opportunity to visit the West Africa to control Ebola virus disease. Today, we have two speakers from African countries from Liberia and Sierra Leone. These countries experienced Ebola virus disease and I'd like to share their experience because Asian country including Laos PDR, Myanmar and Japan have not experienced EVD. So we need to share African countries' experiences. This is very, very important opportunity, I think. So the first speaker is myself.

II. Risk Management in Response to the Ebola Virus Disease Outbreak

Shinsaku Sakurada

National Center for Global Health and Medicine,
Bureau of International Health Cooperation

PLAN of the PRESENTATION

1. INTRODUCTION
2. Trainer's training programme by MOH of DRC/ NCGM/JICA for 8 African francophone countries
3. Infection prevention and control (IPC) in EVD
4. 5S-KAIZEN-TQM in the management of EVD for reducing risk

16/10/01

Infection Control Training

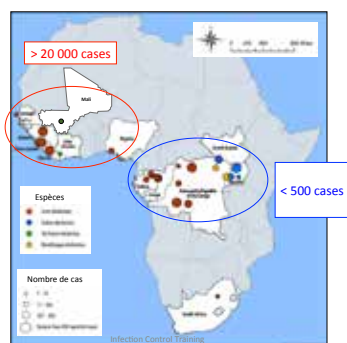
Next topic is Infection prevention and control in EVD. Lastly, 5S-KAIZEN-TQM in the management of EVD for reducing risks. This is a map of entire Africa continent. In the central Africa, there are Congo and Uganda and in these areas, their experience are less than 500 cases and green circle is Sudan's strain of Ebola virus and red circle is Zaire's strain as Zaire was previous country name of DRC. I heard this strain was highly virulent compared to Sudan's strain. I don't know why. This is West Africa including Sierra Leone and Liberia and the number of victims is more than 20000. It's huge number actually.

Dr. Sakurada: I'd like to introduce NCGM and JICA activities in French speaking African countries and title is "Risk management and response to Ebola virus disease outbreak." I requested Dr. Noriaki Ikeda to prepare these slides. He is working in Democratic Republic of the Congo as a senior advisor of Ministry of Health in Kinshasa. Actually original slides were in French and he translated them from French to English but still some words are French, actually these presentation slides are French-and-English mix. I'm sorry for that. Please let me use a note because this slide was sent just a couple days ago from DRC, okay? So this is outline of the presentation.

Knowledge and experiences sharing by DRC to 8 francophone African countries

- **Preparedness:** Important role of the routine surveillance system, particularly on **the community based surveillance(CBS)**.
- **Outbreak response:** Coordination, Risk management in both community and Ebola Treatment Centers, logistics, team building
- **Training :** Contextualization of training modules(introduced **5S/Kaizen/TQM**)and SOPs

The history of EVD Outbreaks 1976 → 2016



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So here are key points of this presentation. Knowledge and experiences were shared by DRC and eight other Francophone African countries; French speaking African countries. What is the most important thing regarding Preparedness. Dr. Ikeda said, that is community based surveillance in particularly resource limited remote areas. Number two: For outbreak response, coordination and risk management in the both community and Ebola treatment centers, hospitals and etcetera are important. Logistics, team building and teamwork are also very important. Number three is training, contextualization of training and modules introduced 5S-KAIZEN-TQM program and SOPs.

Firstly, TOT (Training of Trainers) was conducted in French speaking African countries, in the capital city of Côte d'Ivoire, Abidjan and Kinshasa and the capital city of DRC.



Trainer's training on EVD co-organized by MOH of CÔTE D'IVOIRE and DRC



From 02 to 14 March 2015
Abidjan /
Grand Bassam




First topic is TOT conducted in Côte d'Ivoire and DRC. This is a picture taken in the Côte d'Ivoire. Can you see? This person is Dr. Ikeda. She is also Japanese. This is a group photograph taken in the Côte d'Ivoire after the training.

This is Dr. Ikeda. It is taken TOT, Simulation practice at Ebola Care Center, also this is the one training for care of the patients.

Training contents(7 days)

Core Curriculum

- An Africa without EVD : myth or reality?
- Experience in the DRC in the management of the EVD
- Epidemiological surveillance of EVD
- Follow-up contacted persons with patients
- Medical care of EVD
- Emergency logistics in case of EVD
- Universal Precautions
- Overview of 5S- Kaizen - TQM
- Contextualizing 5S- Kaizen - TQM in the EVD
- Overview on Water, Sanitation and Hygiene - WASH
- Communication in case of EVD
- Taking into psycho- social care in the MVE
- Organization laboratory in the management of the MVE
- Put on / Remove PPE

Specific themes+ Simulation practices in ETC

- Surveillance and Laboratory
- Medical Management
- Logistics and Wash
- Psycho- social issues and communication

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Actually this Trainer's training consists of two major parts. One is core curriculum. This is common curriculum and another is specific agendas and simulation practices in Ebola Disease Treatment Center. So many agendas are here.

Please look at this photograph. Dr. Ikeda pointed out, this situation is not so good because only one person is working here. This person is just standing and watching. He said this is not so good situation. So, working as a team is very important to reduce risk, he said so.



This is training of undressing, the taking off PPE and please look at this photograph. This photo is very symmetric. I think one is for trainee and another is for trainer.

Extention of the EVD

Risk management of the EVD both in community and health facilities(hospitals/ Ebola treatment center)

Community
IPC/Safely burying

Behavioral change

IPC in hospitals/ETC

Universal precautions

By courtesy of Prof
Muyembe TJJ, 2015

EVD = Socio-cultural disease

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So here is mirror image. Extension of the EVD. Here is community and here is hospital. In the communities, most important thing is safely burying and for that, behavioral change is necessary. In the hospitals, IPC implementation is very, very important. Risk management of the EVD both in community and health facilities, hospitals and Ebola treatment centers is necessary. EVD is socio-cultural disease, actually viral disease but this disease have...

Extention of the EVD

Risk management of the EVD both in community and health facilities(hospitals/ Ebola treatment center)

Community
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Behavioral change

IPC in hospitals/ETC

Universal precautions

By courtesy of Prof
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Here are five Italian sisters. Unfortunately in DRC, the

health workers died due to the Ebola virus disease so far in six of eight outbreaks. These Italian sisters died because of Ebola.

Funeral practices as transmission risks of EVD in communities

- Social importance of the death in Africa.
 - Cleaning of bodies by friends, relatives.
 - Expressions of love and friendship: touching and kissing.
 - Cutting fingernails and hair to be sent to villages.

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This slide is for funeral practices in African countries. Social importance of the death in Africa; I think this is very, very an important thing everywhere but maybe in African countries they have some characteristic culture, I mean cleaning of dead bodies by friends, relatives, families. This is very important practice and expressions of love and friendship: touching and kissing dead body and cutting fingernails and hair to be sent to villages. So behavioral change was necessary in village.

Importance of Community based surveillance as preparedness



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Next, community based surveillance. Please look at this photograph. This is meeting of community surveillance team.

Background of CBS in DRC

- **Surface : 2.345.000 Km²**
- **Population: +70millions inhabitants.**
- **26 Provincial Health Departments, 517 health zones and 8628 health areas**
- **Curative care usage rate: 20%**
- **Several epidemics :EVD, YF, cholera, meningococcal meningitis, Rabies, other viral hemorrhagic fever, Measles**
- **Late identification of the cases in health centers**

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Background of Community Based Surveillance in DRC. As you know DRC is a huge country not like Japan. The area is I don't know how many squares. Anyway, it's a huge country and population is more than 70 million. So many people live in Kinshasa, capital of DRC. 26 Provincial Health Departments and 517 health zones and 8628 health areas. Curative care usage rate is 20 percent. This is DRC experience, several epidemics including EVD, yellow fever, now, yellow fever is a very big problem in DRC, and cholera, meningitis, measles and other virus hemorrhagic fever. The famous one is Crimean-Congo hemorrhagic fever and malaria, etc. and measles. And late identification of the cases in health centers is a problem.

CBS activities during outbreak

- **Daily follow-up of contacts**
 - ✓ Door to door
 - ✓ Village to village
- **Daily meeting at community**
 - ✓ Community Relay (Relais)
 - ✓ Titular nurse (Charged nurse)
 - ✓ Local authority
- **Daily supervision**
- **Daily meeting of the surveillance commission**
- **Weekly evaluation**

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CBS, Community Based Surveillance activities during outbreak. Number one: daily follow-up of contacts: door to door, village to village. Saying is easy but implementation is very hard during outbreak. Number two: daily meeting at community: community relay and titular nurse. I'm sorry I don't know the meaning of this words. This is from South?

Dr. Kaly: Nurse in charge or supervisor.

Challenges

- 1. How to maintain and improve community based surveillance in post periods, inter epidemics ?**
- 2. Formalize community surveillance tools**
- 3. How to improve reports promptness ? Real time reporting ?**

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Dr. Sakurada: Local authority, daily supervision, daily meeting of the surveillance commission and weekly evaluation but actually we have some challenges: how to maintain and improve community based surveillance in post periods, inter epidemics. Particularly formalizing community surveillance tools as the format, etc.

Number three: how to improve reports: promptness, timeliness or completeness? These are always problems in surveillance: lack of timeliness and/or completeness in everywhere. So real-time reporting is very important but it's very difficult. There is also some strong resistance from community.

Training Content

MODULE FOR COMMUNITY BASED SURVEILLANCE STRENGTHENING IN THE HEALTH AREAS IN THE FRAMEWORK OF RESPONSE TO EBOLA VIRUS DISEASES

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They developed training content. This is module for community based surveillance strengthening in the health areas in the framework of response to Ebola virus diseases, we developed this.

Risk management in a Ebola Treatment Center introducing 5S/ Kaizen



Mode of transmission in treatment and care

- Patients to personnel
- Patients to family member
- Through work enviroment



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These pictures are also very common. You know, it's a little bit messy. These are used globes but put on the desk. Please look at syringes, needles and etc. This boy has a syringe with needle.

Risk management in Ebola Treatment Center: Introducing 5S-KAIZEN. I think the five S is introduced in many African countries and I think you're very familiar with 5S, right? Not so familiar?

Audience: Some of us are.

Dr. Sakurada: Okay. In management of EVD, the positive attitude and leadership are very important. Dr. Ikeda says 5S-KAIZEN-TQM could be applied to improve countermeasures of EVD like this: improving work environment, team work, time waste and reducing disorder and etcetera.

Audience: Yes.

Thank you for thinking about me for protecting against risk!



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Actually I saw very serious scenes in Pakistan: children were playing with syringes with needle like that in the garden of healthcare center. I saw it and I was shocked.

Mode of transmission in health facilities

- Patients to personnel
- Patients to family member
- Through work environment



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Dr. Sakurada: Please look at these photographs. I think it's very common. Friends, family, relatives always visit patients. Actually they care but the virus could be transmitted patients to healthcare workers and also patient's family, friends, relatives.

Change organizational culture by 5S-KAIZEN-TQM. I don't know if it's easy or not maybe not easy but we can. I hope so. Improving work environment, development of work teams, optimizing available resources.



Waste management using color coding

Triage of waste (S1)
Everyone's responsibility

Cutting object	bottles	Soft waste	Organs
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He is a pilot and this is a copilot. This is a team. Team working is very important.

So, I have too many slides. I need to skip and I need to accelerate.

5S-KAIZEN-TQM IN REDUCING RISK OF EVD

principle		S1 (Seiri, Sort)
S1	Sort and Separate, Remove unnecessary items and keep the only necessary items in the workplace for the current production, Work on free area. Eliminate contaminated objects or any risk of / potential contamination	<ul style="list-style-type: none"> • save space in the workplace • help to identifying the potential hazards
	<ul style="list-style-type: none"> • Case Definition • Contacts tracing 	<ul style="list-style-type: none"> • Triage in ETC • Biomedical waste sorting • Discard any contaminated objects

Next is waste management using color-coding. This is very important segregation by color-coding. I think now, many hospitals are implementing this color-coding like this.

S1 is 5S's first S and sorting or separating. In Japanese, it's seiri. Saving the space of work place and help identifying potential hazard. This is very important.

CHANGE ORGANIZATIONAL CULTURE by 5S-KAIZEN-TQM / EVD

Risk management of the EVD both in community and health facilities(hospitals/ Ebola treatment center)

Community IPC/Safely burying	IPC in hospitals/ETC
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- **Mission** - Stop transmission chain & case management
- **5S- Kaizen** = operational approach
 - Improving work environment
 - Development of work teams
 - Optimizing available resources

5S-KAIZEN-TQM IN REDUCING RISK OF EVD

principle	
S2	<p>Set-in-order, Decide the designated place to keep necessary items in the workplace, where it is easy to access them. Then they are found immediately and returned easily or replenished properly.</p>

S2 (Seiton, Set-in-order)

- saves time as required in emergency,
- reduces the risk of confusion/error, risk of contamination,
- limits movements of staff
- strengthens the security of staff

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5S-KAIZEN-TQM IN REDUCING RISK OF EVD

principle	
S4	<p>Standardize Establish the 3 first S as routine (by using Sort, Set-in-order, and Shine activities) Continuous use of protocols, visualization</p>


S4 (Seiketsu, Standardize) :

- making rules in order to maintain successful practices and the workplace security
- Developing habits work in team

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5S-KAIZEN-TQM IN REDUCING RISK OF EVD

principle	
S2	<p>Set-in-order, Decide the designated place to keep necessary items in the workplace, where it is easy to access them. Then they are found immediately and returned easily or replenished properly.</p>




- Mapping of villages
- Compartments of Suspected Cases / Confirmed Cases
- Zoning: High risk and low risk
- Well-organized care table
- Storage and ranking of medicines, records and other inputs

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5S-KAIZEN-TQM IN REDUCING RISK OF EVD

principle	
S4	<p>Standardize Establish the 3 first S as routine (by using Sort, Set-in-order, and Shine activities) Continuous use of protocols, visualization</p>



- Protocols, SOP
- Use of Check list
- Visualization of the process
- Signalling, Visual Indication (to attract attention to the danger), Color coding
- ETC Circuit : patient circuit, care staff circuit
- Staff turnover

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Number two is S2: setting order, seiton in Japanese. Save time is required in emergency. Reducing the risk of confusion, error, risk of contamination. Limit movement of staff and strengthen security of staff like this. This is Ebola Treatment Center.


Number four : standardization is very important. It's seiketsu in Japanese. Making rules in order to maintain successful practice. This is practicing Ebola Treatment Center.

5S-KAIZEN-TQM IN REDUCING RISK OF EVD

principle	
S3	<p>Shine, Clean, Disinfect, Cleaning up the workplace/ environment</p>

S3 (Seiso, Shine) :

- essential in reducing the risk of human-to-human transmission



- Safety burial
- Hand washing
- Decontaminate the environment
- Systematic use of footbath, chlorine solution 0.05% or 0.5%
- Laboratory Diagnosis (precision)

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5S-KAIZEN-TQM IN REDUCING RISK OF EVD

principle	
S5	<p>Sustain Make a self-disciplined habit of maintaining rules, procedures and arrangements of the organization Keep applying the 4 first S, Sustainability of the achievements</p>

S5 (Shitsuke, Sustain) :


- Maintains all successful practices over the time
- Develops organizational culture

16/10/01

Number three: shining, cleaning and disinfecting. This is critically important IPC. This is seiso in Japanese.

5S-KAIZEN-TQM IN REDUCING RISK OF EVD

principle	
S5	<p>Sustain Make a self-disciplined habit of maintaining rules, procedures and arrangements of the organization Keep applying the 4 first S, Sustainability of the achievements</p>

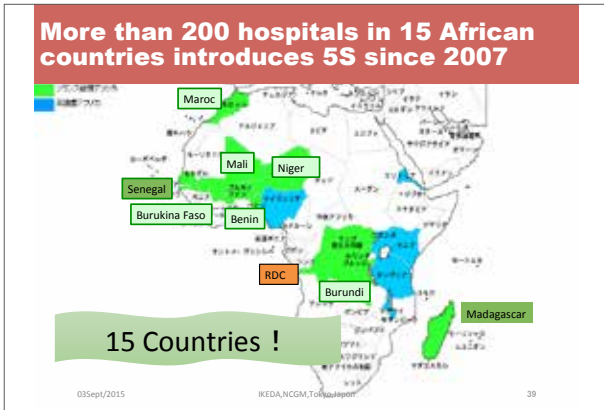


- Community Sensitization
- Training of health providers
- Use/Involvement of community leaders and of "champions"
- Instructions

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Last one, 5S is sustain. Everybody knows that to sustain the things is very important but very difficult. Shitsuke in Japanese. Shitsuke is discipline in English word, maintaining the all successful practice or time and developing organizational culture. I think that you had 5S lecture by Dr. Handa, very impressive lecture, right?

Audience: Yeah.



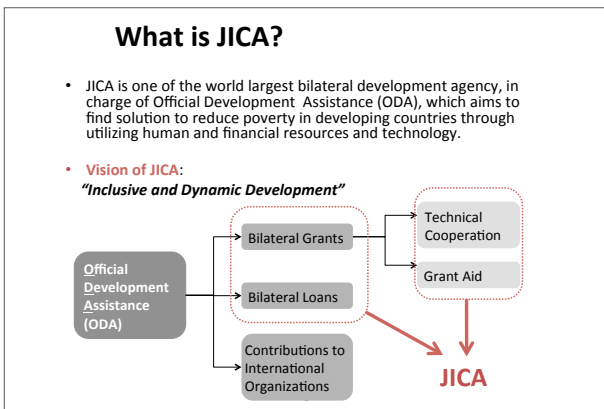
Dr. Sakurada: Okay. I'm not an expert of 5S. That's why I do not mention the principle of 5S here but this is practice in Ebola Treatment Center. So 5S has been introduced in 15 countries in Africa now. This is the last slide. Thank you very much.

III. JICA's Response to Ebola Outbreak

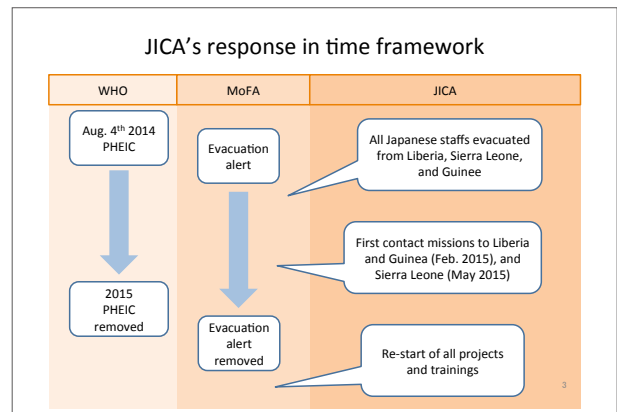
Akiko Saito
 Associate Expert,
 Health Team 2, Health group 1, Human Development Department,
 Japan International Cooperation Agency (JICA)

Ms. Saito: Good afternoon, ladies and gentlemen. It's my honor to be here. My name is Akiko Saito from Japan International Cooperation Agency, JICA. Now, I'm going to talk about JICA's response to Ebola outbreak. My presentation may not cover for all the JICA's response to Ebola outbreak. So you can ask any questions after the presentation and my colleagues can also help answering your questions.

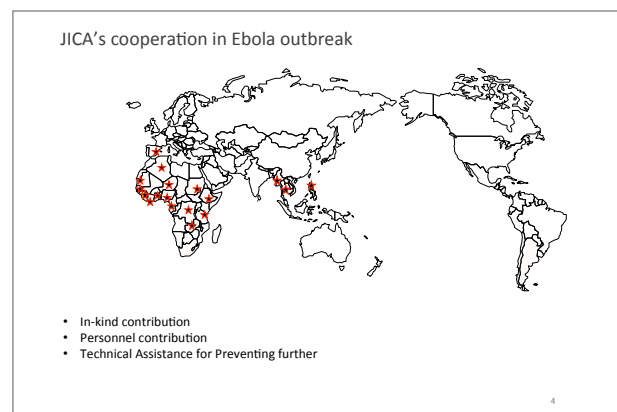
In this presentation, first, I'll talk about what is JICA and JICA's theme and then I'll talk about JICA's response in time framework and then, I'll give you some examples of our cooperation and maybe some challenges we've faced and at last, I'll give you some ways forward.



So first, what is JICA? As you may know, JICA is one of the world largest bilateral development agency, in charge of Official Development Assistance, ODA, which aims to find solution to reduce poverty in developing countries through utilizing human and financial resources and technology. Our vision is "Inclusive and Dynamic Development." So JICA has some schemes such as bilateral grants, bilateral loans and technical cooperation and grant aid. We used these schemes to achieve our vision. Please remember that JICA is not funding agency or emergency responding agency, so we operate our activity in normal condition.



How we acted to the Ebola crisis in time framework? In August 1st, 2014, WHO issued PHEIC. So following that, Japanese government, Ministry of Foreign Affairs, also issued evacuation alert. Then all JICA's, Japanese staffs evacuated from Liberia, Sierra Leone and Guinea and after the peak of the Ebola outbreak was gone, first contact missions to Nigeria and Guinea was sent in February 2015, and Sierra Leone in May 2015 and early 2015, WHO removed PHEIC. So also Japanese Government, Ministry of Foreign Affairs, removed Evacuation Alert. So following that, JICA restarted all the project in these countries and also receiving the trainees and participants like you from these countries.



So these are the just simple illustration to show like in which countries we have done the operation regarding

Ebola outbreak not only the three countries like Liberia, Sierra Leone and Guinea, we also supported some countries, neighboring countries as well as some countries in Asia and we also conducted these variety of cooperation as I wrote a little bit on the bottom. There're some in-kind cooperation. We provided some protective material like equipment and also personnel contribution by dispatching some expert to the WHO mission. Also we did some technical assistance for preventing further spread of Ebola.

Ebola Responses and Involvement:

- Sierra Leone, Liberia, Guinea and other countries

In-kind contribution

- A total of 720,000 sets of personal protective equipment (PPE) donated to Sierra Leone, Liberia Guinea, other countries.
- Other equipment and materials such as tents and water filter for medical response were provided (total value 89 million JPY (850,000USD))
- 28 motorbikes to be used for surveillance were donated to Sierra Leone

Personnel contribution

- Total 16 experts dispatched to participate in WHO missions.

Technical Assistance for Preventing further Spread of Ebola in 18 countries (120 million JPY (1,141,000USD))

- Ebola Response Hubs- e.g. Noguchi Institution in Ghana
- Border, Airports –e.g. training for police officers in Cote D'Ivoire
- Health Facilities/Health Workers- e.g. trainings for medical staff in Ghana, Benin, Ethiopia
- Awareness Raising- e.g. Ebola brochures in Nigeria

5

In this slide, I'll give you some examples of our cooperation especially in these three counties and a little bit cover for the other countries. Other in-kind cooperation, we have provided a total of 720,000 sets of personal protective equipment, PPE, to Sierra Leone, Liberia, Guinea and other countries. Also other equipment and material such as tents and water filter for medical response and 28 motorbikes to be used for surveillance in Sierra Leone were provided. Furthermore, personnel contribution in Asia: Total of 16 experts dispatched to participate in WHO missions. As I said, JICA is not emergency responding agency, we did not have anything like JICA standalone mission during crises but we dispatched some experts to WHO mission. Those experts were epidemiologists and so on.

Technical Assistance at post Ebola -Sierra Leone, Liberia and Guinea

- **Sierra Leone**
 - Project for Strengthening Supportive Supervision System
 - Dispatch Expert of Strengthening Nursing Skills on Newborn and Child Health Care
 - Rehabilitation of health facilities (EmONCs)
- **Liberia**
 - Project for Management Capacity Development for Health Services
- **Guinea**
 - Provision of Rapid Diagnostic Kits for Ebola



6

Technical assistance for preventing further spread of Ebola in 18 countries. We have the lab called Noguchi

institution in Ghana. This institution was built by Japanese ODA and we have been supporting for many years. So in this institution, there were some tests done for Ebola. So we supported these institutions and also at the border and the airport, for example, we trained those staff such as police officers in Côte d'Ivoire. We also provided trainings for medical staff in Ghana, Benin and also Ethiopia as well as conducted activities for awareness rising. Here we distributed some brochures in Nigeria. These are some examples. And after the peak of the Ebola outbreak had gone, at the era of the post-Ebola, we restarted all the projects and started receiving the participants of the training. So in Sierra Leone, we have three things going on.

The first one was the project for strengthening supportive supervision system. This project was there before the Ebola outbreak and now, it has restarted. Secondly, dispatching a expert of strengthening nursing skills on newborn and child health care and this one was also there before the outbreak but it was stopped because of the outbreak. So she is going to be in Sierra Leone next month. Thirdly, rehabilitation of health facility is going on. In Liberia there's a project for management capacity development for health services and this project was also there before the outbreak. This project and the first one for Sierra Leone, these're aiming to strengthen the health system. After the Ebola outbreak, we did realize that strengthening health system to be resilience for the outbreak or any those kind of projects are very important. So now, we are very committed to these kind of the projects. In Guinea, Japanese government provided diagnostic kits for Ebola. So JICA provided technical support to use this kits.

Way Forward

- Accelerated implementation of IHR in a integrated manner among GHSA and other works and initiatives
- Support IHR capacity building in align with priorities of partner countries , as an integral part of health systems strengthening toward achievement of UHC.
- Support to build pandemic-resilient societies, through coordinated multi-sector investments and activities and global learning.
- Strengthen regional and in-country surveillance response capacity Africa (Noguchi Institute in Ghana, ECOWAS CDC)

There're some difficulties for JICA because we're not emergency responding agency or funding agency but we tried to find our way to cooperate to tackle the situation. What we found out from this experience werethat 1) accelerated implementation of IHR in an integrated

manner among GHSA and other works and initiatives, 2) support IHR capacity building in align with priorities of partner countries, as an integral part of health systems strengthening toward achievement of UHC. These are about the projects I mentioned in the previous time. And also 3) support to build pandemic-resilient societies through coordinated multi-sector investments and activities and global learning. Finally, 4)strengthen regional and incountry surveillance response capacity in Africa, for example, Noguchi institution in Ghana and ECOWAS in Nigeria, these two labs could have to cover the whole regions in that area in Africa. Thank you very much.

Dr. Sakurada: Only urgent questions or comments because we'll have discussion time after all presentation, okay? But if you have urgent questions or comments, please. Don't hesitate.

Dr. Kanai: Excuse me. I have a comment.

Dr. Sakurada: Please, Dr. Kanai.

Dr. Kanai: Thank you. I would like to add one comment about PPE, 720,000 PPEs were donated by Tokyo Metropolitan Government. Thank you for that.



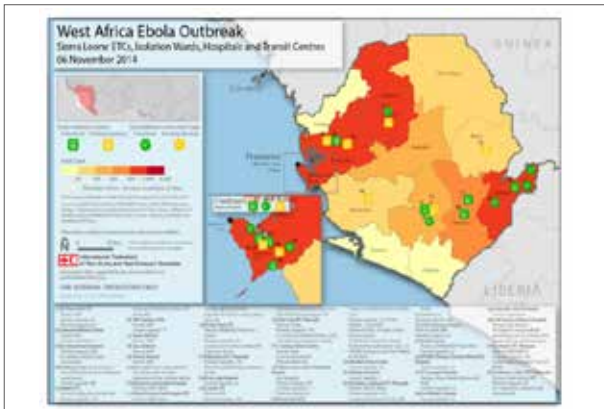
IV. Sharing Experience on Ebola Outbreak in Sierra Leone

Masiray Colojumah Kamara

Doctor in charge, Isolation Unit, International Medicine Dept., Connaught Hospital, Ministry of Health and Sanitation

Matron Fatmata Kargbo

Acting Matron, Nursing, Ola During Children's Hospital, Ministry of Health and Sanitation



SITUATIONAL ANALYSIS OF EBOLA OUTBREAK IN SIERRA LEONE

- Ebola Viral Disease (EVD) is a severe haemorrhagic fever disease caused by a virus (Filoviridae) with a 90% death rate (WHO, CDC and MOHS 2014).

Dr. Kamara: Good afternoon, everyone. I'm excited to be here this afternoon to share experience of the country and I like revisiting from Sierra Leone. We appreciate this opportunity given to us. I am Dr. Masiray Colojumah Kamara giving you the presentation of my experience on Ebola Outbreak in Sierra Leone alongside of my colleague, Ms. Fatmata Karbo, from Ola During Children's hospital. We're all working with the Ministry of Health and Sanitation. So Ministry of Health and Sanitation in Sierra Leone. Outline of the presentation is going to be like this: sharing with the situation in Sierra Leone during Ebola outbreak. We're going to write what it was like in Connaught hospital and Ola During Children's Hospital where most staffs are working and to highlight the protection and safety management of that during the Ebola outbreak by health workers. We've been providing treatment of patients in Ebola Treatment Centers and to share with you experience we had during the Ebola outbreak.

I'll just brief introduction of Ebola virus disease. Ebola virus disease is hemorrhagic fever caused by a virus. It's 90 percent death rate according to WHO, CDC, and Ministry of Health in 2014.

SITUATIONAL ANALYSIS OF EBOLA OUTBREAK

- This deadly disease invaded S/L from the east end in May 2014.
- It was a chaotic situation that could be viewed with both challenges and opportunities.
- Challenges are developed from the fact that Sierra Leone is a Post-war country, Low Income Country and High infant and maternal mortality rate etc.

SITUATIONAL ANALYSIS OF EBOLA OUTBREAK

- In terms of opportunities, the recent outbreak of Ebola in Sierra Leone served as an eye opener to the weak health system of our country.
- Detection of the disease was difficult, as early symptoms are hard to distinguish from those of malaria or typhoid common ailments during the raining season.

SITUATIONAL ANALYSIS OF EBOLA OUTBREAK

- With difficult detection, isolation and containment of EVD cases was a big challenge.
- To the public, it was hard to accept that Ebola is real.
- Their perception was that Ebola is a deliberate design to kill people (SIERRA UPDATE 2015).
- Resistance to go to health facilities
- Attacking health workers during the early stages of the outbreak.
- Rejection and stigmatization of victims are other factors.

In May 2014, we had first cases of Ebola diagnosed in East part of the country that is Kailahun which as border with Liberia and Guinea. That was difficult time because at that time, it was difficult to recognize the first cases because Ebola virus disease which have share symptoms and signs but similar to the most common causes like several illness like malaria, typhoid fever and other diarrhea like symptoms which manifested by Cholera.

So it was very difficult because it was first time. So recognizing it was a problem and accompanied without that against by poor or inadequate IPC standards at that time because before Ebola, IPC was there but awareness and adherence IPC measures in the Health facility was not as it is now to be and also lack of confidence by the public in seeking treatment in our facilities.

This was due to the first thing with that the public lack confidence to go to the hospitals because that's Ebola thing is not actually disease from God. It was like a weapon want by scientist just to wipe off all human race and also because they noticed that people were providing care at the hospitals; another health facilities were dying of Ebola.

So how come we go to these hospitals? Those are supposed to provide care for us dying. We're not going there. And also because of cultural beliefs and practices. That's we're discouraged during the time of trying to combat like tell them not to touch dead bodies and as I was saying the culture, when you lose your relative, you pay them the last respects, you touch them and you wash the dead bodies and perform other ceremonies. Some cultures don't preserve that body like bury the body and family come. So those cultures we're discouraged because of the contact and it was very, very serious if you touch a dead body. So they refuse to believe a couple of other things. So this factors actually let to the serious outbreak.

INCIDENCE

- First diagnosed case was in late May 2014 from Kailahun District; East of Sierra Leone
- By June 2014 there were 158 cases, in late July 2014 533 cases.
- The first case was reported in the on the 19th July, 2014
- Kialahun District was heavily affected and was referred to as the "Birth place of an outbreak"(Muller, 2014)

INCIDENCE

- Among health care workers where 221 Nurses and 11 Medical Doctors lost their lives (CDC, 2015)
- The outbreak of Ebola in the country infected **8706** people of which **3956** died, (CDC 2014)

Eventually by 2015, when they declared serious Ebola, we had 8,760 confirmed cases, out of which 3,590 that was 41 percent of the total confirmed cases data and 4,051 survived and among these figures, we have total of 296 Ebola confirmed cases among healthcare workers and among which 75 percent died including 11 medical doctors. Imagine the continent that was so stuffed. In terms of medical personnel, we didn't have enough doctors and nurses at that time. Losing this kind of number was big problem for us.

ACTION

- It was crucial to understand the nature of the disease; how it is transmitted and how to prevent it from spreading further.
- Above all; how to protect the health workers and care givers.
- Hence, knowledge on Ebola for risk reduction was the focus.

ACTION

- International Non-governmental Organisations(INGOs)-WHO, UNICEF-NGOs, MOHS, MDAs (ministries departments and agencies) in a collaborative effort came together to fight against these major challenges.
- Multiple assessments were quickly made by partner organisations and MOHS.
- Centres were established for trainings on Ebola.
- The British, Chinese and other nations had centres to train and capacitate Health workers, (both local and internationals), Local authorities, Youths etc. on the fight against EVD.
- Massive and rapid sensitization about the disease was enhanced

ACTION

- An Interim emergency guidelines Sierra Leone adapted
- Rapid training of the 121 PHUs (peripheral Health Units) and the district tertiary hospital staffs was done on the following topics:
- Infection Control and standard Universal Precautions.
- Ebola case definition.
- Protocols on how to alert the DHMT about a suspected Ebola case.
- Protocols for isolation of suspected Ebola cases

ACTION

- Sensitization of the public on the signs and symptoms of Ebola
- Hand washing with 0.5% chlorine or soap and water
- Periodic market centres were closed
- Movement was limited between the main outbreak areas and the city
- Check points mounted along the main highways
- Temperature monitoring
- More isolation centres were created
- Laboratory facilities were established to fast track testing of Ebola specimen obtained from suspected patients

So it's just like to give you brief overview on Connaught and Ola During hospital in relation to the effect of Ebola since this among health.

In Connaught hospital where I've worked, it seemed care workers including three doctors, nine nurses, two hygienists, one ambulance driver and a revenue collector with two securities were infected, most of them died but there is only one evidence among all these number that actually a lot affected working in the isolation units but one of the hygienists, one of the nurses was actually infected this morning and he died and also other one of the hygienists, actually it was not evidenced, it is believed that it could have been infected in the isolation room because he was in the habit of collecting budget for patients charging

like four rooms and several times, he has been advised to stop. That's why that kind of practice. So when he got infected, it would be due to that but rest of other people including those like Ola During, we have three care workers and two nurses and one medical doctor who was second pediatrician. It was second we just it just specialized and went to help and he died. It was direct infection because it was working in the wards trying to catheterized patients. Because of the deficiency, IPC did not provide face shield, and it got directly into his eyes, got infected and died.

Because of the high infection in the country at that time and we have not enough treatment centers. A treatment center we have where in the East. And whatever it is and wherever it is, the case is detected. Most of them died.

SITUATION AT WORKPLACE

- At Ola During Children's Hospital where I work the bed capacity was reduced from 250 to 180. There was no ETC but there was an Isolation/holding unit constructed
- Suspected cases Isolated
- Confirmed cases transferred to ETC
- From November 2014 to December 2015 there was 3667 suspected cases of which 162 were confirmed positive and transferred to ETC

SITUATION AT WORKPLACE

- Among the staff two nurses and one of the vibrant medical officers was directly infected and died
- Non of the staff working at the isolation/holding unit was infected

Patient who are coming to the hospital, you need to isolate. At that time, there was no idea about isolation in the hospitals but you tend to have cases coming as suspected cases instead of sending them back to the community, we have to keep them in the facilities that waiting for the result to send health center or treatment center.

So the idea of setting up an isolation facility in all healthcare facilities started. In Connaught hospital, we started on 16 bed facility isolated and the end of the July 2014 to March 2015, we had total number of 1,125 cases isolated and 51 percent were positive. All of them were

sent to treatment centers. And in the Ola During Children's Hospital, we had 23 bed facilities, isolated patient and we had 3,667 cases which are sent to the treatment center. November 2014 to December 2015. So this kind of numbers you're seeing here. Like we said, that's kind of facilities and isolated patients. These patients infected more and more people in our communities. So idea of isolation was very important and up to now, all the major healthcare facilities including a facility we are still maintaining isolation, facilities as we had to do during Ebola outbreak.

IMPACT OF EBOLA VIRUS DISEASE IN SIERRA LEONE

- From the inception of the Ebola in May, 2014 to the time it ended in November 7th 2015, Sierra Leone is adversely affecting in the following sectors:
- Health sector
- Educational sector
- Agricultural sector
- Commercial sector
- Social sector

ADVERSE EFFECT OF EBOLA VIRUS DISEASE



So as a result of all this the things I was talking about, it actually exacerbated already inadequate human resources for health in our county and this reduction in service delivery to the community and it reduce the confidence of the community in seeking help and help facilities and subsequently there was reduction of utilization of healthcare facilities because of the doubts and all the things up against health sectors if we fall into the traditional herbalist to provide care for them, although some died.

PROTECTION AND SAFETY MANAGEMENT OF HEALTH WORKERS AT ETU CENTERS

- Intensive trainings of staffs on IPC
- Refreshers training
- Special treatment centers for health workers (Kerry town)
- Expatriate working along side nationals on the use of PPEs regarding donning and doffing
- Adherence to protocols
- Daily monitoring of health workers health status- (temperature checks)
- Collaborative work among staff

PROTECTION AND SAFETY MANAGEMENT OF HEALTH WORKERS AT ETU CENTERS

- Motivation of staffs in the form of risk allowances, three meals provided a day.

So all these things, it actually hits all country because more people are dying. But because of the outbreak, it became eye-opener for us and they highlighted problems within the health sector which including lack of IPC infrastructure, evidence by inadequate or inappropriate personal protection equipment at healthcare facilities which we want to say thank you to JICA because we didn't have time for outbreak. We didn't have anything in stock in terms of personal protection but other developing counties or developing donors, they came into aid like JICA, we sent a host of PPE country. So we want to say thank you for that. And hand hygiene stations that's idea, it was not the part of culture or practice because before the time of Ebola, people even died, Phlebotomists, we take large samples without putting any gloves and areas where you're supposed to protect yourself, we don't take that as serious issue. Hand washing was not part of this. Washing our hand was really wanted and system for waste management was very poor at that time. We've just kept everything anywhere. You see the virus and the needles left on the infusion. Palms exposed actually accidentally like just injured any health worker. So that idea was not there and concept of screening and triage was in lack before Ebola. Lack of IPC knowledge among healthcare workers and no IPC policy before. So that was like an eye-opener for us.

LESSONS LEARNT

- Ebola exposed our weak health system
- There is need for every health facility to have a triage which has not been in place before the outbreak
- Infection Prevention and Control knowledge that was lacking was improved
- The need to strengthen the Water, Sanitation and Hygiene systems in health facilities was revealed

LESSONS LEARNT

- I learnt the lesson of how importance is community mobilization in combating an outbreak

As a result of that, Ministry of Health and Sanitation actually developed the PIC hospital program. So we developed national IPC program which was initiated by the Ministry of Health and Sanitation and another development partners in March 2015 and the key objective hospital program was to establish a national IPC system in the country so that be in charge of any other outbreak to take care of that.

And key achievements so far because of the hospital program are set up by the Ministry of Health, we set up a structure which IPC committee headed by coordinator and IPC training program for all health staffs and essential items needed for personal protection I believe whenever we wanted. Assessing and monitoring IPC practice within the hospital: mostly this is done by the link nurses in the wards so that we can tie up to IPC practice and improving WASH infrastructure and facilities in hospitals. As a result of all this thing, ended up we had opportunity of having IPC policy in the Ministry. I brought here copies of them. The importance of IPC at the national level, want to creates culture of safety in healthcare facilities, protects patients and healthcare workers from healthcare associated infections. It would serve us lessons, document for IPC best practices and also promotes culture of continuous improvement in all healthcare facilities. It is intended for all healthcare workers.

Key points for the National IPC Policy for healthcare workers: it's emphasized hand washing, waste management, sharps injury and incident reporting sharps injury management and incident reporting, cleaning of the environment because protection starts from that point and how to cleaning up spills.

During the time of Ebola, I'd like to share with you how health workers were working in Ebola. Training healthcare workers on IPC, there is ongoing support and IPC mentors for us. We have like key partnership we'll be doing from time to time. Screening staffs during staffs are working anytime you're going to the hospital, temperature is taken. That is done in all health facilities and monitoring of health status healthcare workers if you don't come work or not somebody will call and "what is wrong with you?" Maybe you're monitoring when you're awake and working in short shifts because we appreciate system because of the exhaustion. WASH system were introduced so that we don't overloaded health worker. Also we had the buddy system in which people working in twos. The one is watching back. Maybe get dizzy so that you don't expose yourself and enhancing environmental safety by cleaning. Closure of facilities which are not actually meeting IPC standards, mostly that's affected private hospitals and setting up of IPC committees to monitor IPC activities. Screening patients and visitors and isolating suspected cases. So far the lessons learned we'll never wish miss again and prepare to handle any outbreak similar to Ebola because we know the deficiency that we had actually affected was not being able to curtail outbreak and because of all the experiences, we learned this lesson that we should always prepare to handle whatever it is. That is going to attack Sierra Leone. Thank you.

Ms. Maureen: Probably it's not a question but it's a comment. Good afternoon, everyone. I'm Maureen. From Zambia, also came from African country where also experienced epidemics. I used to hear it on radio during the outbreak. But I heard from Sierra Leone firsthand information is so touching and there're such a number of health workers in the continent and I think we just want to say thank you for support and received from developing country. I think it's so touching. I almost shed tears. Thank you.

Dr. Sakurada: Any other question or comment, only urgent? If not, thank you very much, Dr. Kamara. Next speaker is Dr. Musa from Liberia.



V. Ebola Outbreak Response in Liberia

Musa Zuanahz

Medical Director, Curative Services, Tellewoyan Hospital, Ministry of Health

Jean Kokoi Kaly

Medical Director, PSHC-AI&P, Matha Tubman Memorial Hospital, Ministry of Health

Dr. Musa: Good afternoon. My name is Dr. Musa Zuanah from Liberia and I'm here with Dr. Jean Kaly, medical doctor from Liberia as well. I will be presenting on behalf of Liberia as directed by Dr. Kaly who originally planned this presentation today. Before get started, I want you to see that's what called Ebola virus. I mean many of you've seen that already but just give you a snapshot that you can see there. This is a virus but as you can't see, it's a fruit bat like

flies in many part of Africa. This is the fruit bat. It is major host of Ebola virus. It goes to fruit like mango and other things, eat the mango probably dropped from the tree on to the ground and get taken by animals and eaten by animals and animals come across what aim on. That's how we can get it physically from those animals. That's partly what we show you.

Situation of Ebola outbreak in Liberia

Overview of the Response in Liberia

Overview of Pillar Activities

The response Workforce

Situation of Ebola outbreak in Liberia. It was very difficult road coming from high amount of infection to Ebola to zero. The problem of Ebola virus came from Guinea total of count in Liberia as my colleague rightly said that it came from Guinea. Guinea, Liberia are always share border and I like what Dr. Sakurada said it is socio-cultural kind of disease because basically these three countries share common tribes and common tradition, beliefs and cultural values because of that. So what happened in Sierra Leone is brought to Guinea and Liberia. What happened in Guinea will go to Liberia and Sierra Leone. What happed in Liberia will go to Sierra Leone because we have constant movement from those three countries.



THE LONG ROAD TO ZERO No NEW CONFIRMED CASES IN LIBERIA

- The Ebola Virus Disease was first confirmed in Liberia **in March 2014**. **The first case** was identified in **Foya – Lofa County** –border with Guinea.
- The EVD epidemic started **with imported case** from Guinea in March 2014 and in May 2014 from Sierra Leone.
- Liberia remains the **worst affected** country in terms of the highest number of EVD reported cases and deaths out of the current 6 affected countries in West Africa.
- Liberia completed **42 days** with no new confirmed case and was declared **“EVD Free” on May 9, 2015**.



First case of Ebola started in Liberia in March which came from Guinea. It went to Lofa County in Foya to be very precise. It started with important case from Sierra Leone and Guinea as I say area. However, among the three countries are affected, Liberia was most affected among them all. I think my colleague mentioned so many of them why Liberia, Sierra Leone, Guinea got affected. The reason why we have the worst case because of all the

poor structure we have,, plus one was shown to the world, shown to us that our healthcare system was poor, was not organized, it will prepare whatever we saw in front of us, nothing. That's why we're exposed from very beginning. Liberia completed 42 days with...

Dr. Kaly: No new confirmed case.

- The journey to zero was difficult and took **many lives**
- The total cumulative cases and deaths as of the week of **May 9, 2015** : **confirmed EVD cases: 3,150**
- **Deaths : 4,785**
- **378 healthcare workers** were infected with EVD, and **192 deaths**
- All counties in Liberia reported EVD cases at different times within the outbreak period
- We adjusted and adopted various strategies across the thematic areas to get to Zero
- The **IMS** and the **Presidential advisory committee on Ebola (PACE)** had to make to hard call painful decisions to save the state
- From **resistance** to **Community partnership for response**



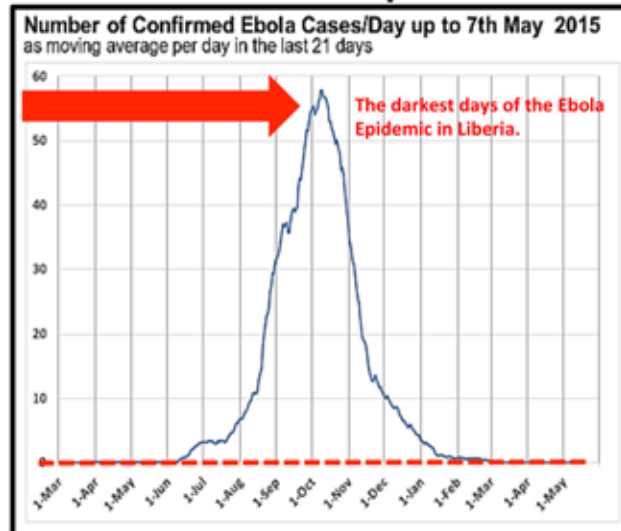

Dr. Musa: Yes. From Liberia, the total cumulative cases and deaths as of the week of May 9, 2015, we had 3,150 confirmed cases confirm Ebola positive. Deaths in Liberia are 4,785 deaths. This confirm was 3,150 those were not confirmed to die but there was just tested them all because it was all of the countries we have that number. Every counties in Liberia, 378 healthcare workers were infected with EVD, and we lost about 192 deaths. 192 healthcare workers died as a result of this EVD in Liberia. All counties in Liberia reported cases of Ebola in Liberia. As a result of outbreak, we have what we call the IMS which was the, what was it?

Dr. Kaly: Incident Management System.

Dr. Musa: We say Incident Management System to get the Presidential advisory committee on Ebola and reason for that because case were actually far gone beyond Ministry of Health alone. Our Ministry of Health could not handle outbreak. They waited for Presidential advisory committee on Ebola, then it's the management.

As I told you, this is Liberia. That's Republic of Guinea and that's Sierra Leone. So you see from here, it's close to Liberia. From here, it's close from here to Sierra Leone. These three countries share common border as you can see there. We see why our three countries got infected. That was a reason why because of that.

A look at the past



During the infection in Liberia, there was a very big peak beginning of August, there was beginning of June, July in Liberia. So many people died up to this time. We want to say thanks to international community because the incident of Ebola started only it had started in Liberia, we're very confused. We have not come across before. We didn't know it. We didn't know how to respond it. Many of health-cares just pulled down and many health workers ran

away and health workers refused to go to hospital because there was no way to control disease how to do it, what to do and I'd like to say in our counties, citizens are very poor, sometimes low material. I remember I'm not coming across what it's called this complete PPE. I did not it was existed or didn't know how to use them before. So we didn't know the magnitude of the virus infection was coming our way.

Dead body management

BURIAL TEAMS: **Montserrado (19)** –supported by IFRC/Global Communities. Within the **OTHER COUNTIES** there was a total of **45 teams**.



SAFE BURIAL to SAFE AND DIGNIFIED BURIAL

NONE OF THE TEAM MEMBERS GOT INFECTED !!!!!



6

What did we do when it has started? Before it started, we had people are dying everywhere every corner. So first, Management System are very active. Before you come

to our country, people were dying. What we're going to do? People died yesterday, today, tomorrow but we don't know what to do. So we had multi system of attack, we

call Burial Teams now. Burial Teams were set up but we say there was a problem: beliefs, attitude, religion. For example, most of people talked about it African setting. Like Dr. Sakurada said early on, so many patients on the bed. That's a typical African setting. If someone gets ill, all of the African relatives visit the person and when they're visiting, sit on the bed. Now, it was a long-term practice for African. When someone is ill, you look after the person. When the person die, you wash the person, and give them proper burial. There is ton of memorials. Then all of the sudden, you come to here and "Listen, someone like your

relatives get ill, don't touch them." This is not. "Don't touch them? Why? It's not possible. We can't do it." So we see first resistance. They said "No, we can't believe because we have been doing for ages of memorial. What and why this disease can catch someone?" "Listen, don't touch them." "Oh, it's not possible." We found the team in Liberia to go and visit a community to talk them about Ebola. They stole our car, damaged it and threatened because they felt what I was saying to them was not true. They didn't believe us. So we sent all burial team. They took care of this situation.

COMMAND AND CONTROL STRUCTURE

- The **GOL/MOH** showed the leadership and political commitment required in the EVD response
- IMS set the pace for **critical decision making** and **strategic planning**- led the **coordination** of the response along with its **partners**
- **Thematic chairs** and teams led the **practical implementation +coordination** portion of the response
- PACE managed the strategic and political bit
- A **new EOC constructed** to for enhanced coordination post –EVD



Then what happened next? It was command and control structure where the Liberia government from the presidency had the structure that was there to respond effectively to this situation. So that's how structure came about. Incident Management Center was set up

for proper decision-making whereas the Presidential advisory committee took care of this strategic and political aspects where you have to mobilize calling for assistance and etcetera to the situation. You can see there was coordination command center that we organize in Liberia.

OVERVIEW OF PILLAR ACTIVITIES




WORKING
IN
PARTNERSHIP

What did we do to get out this situation to continue and get information? Now the organization have had experience from this Ebola situation. Our partners were afraid to join us and then JICA were also here and sent us material. We didn't know how to use the materials. It's for nothing and we didn't know how to use them "check the body, check the body" and take it away but partner let to us. It was life-saving situation. You don't have to run away, we can fight it together. we fought together and it was very good experience for us in Liberia.

Epi/Surveillance

- The Team provided the **evidence for decision making**.
- We had maps, graphs, tables and tree of chains of transmission
- The **Sit-Rep** is being produced on a daily basis
- Liberia went from **about 60 confirmed cases** per day to zero cases of Ebola with **complex chains of infection** at the finishing line
- Montserrado County (Monrovia) accounted for the majority of cases
- The outbreak was geographically widespread, with cases being transported out of Monrovia to the other counties



Surveillance: we're from Liberia team. In Liberia team, what we did? Most of the people was not allowed to bury their body. We said "No, because they wash their body then pray before they bury it. So they didn't allow Muslim to bury it, they didn't allow person to bury it and some person allowed to bury the body. So what did we do? We contacted the mosque. "Okay, we want you to give us maybe four or five people, we'll treat them to become a burial team." And most of them died. They were buried person. Same thing we did with the churches as well. We have a burial team, doctor burial team where we had burial team everywhere to respond the situation. This was the structure of command. I mean she is not Liberian, she is one of the NGOs or structure of command.

Priorities in Active Surveillance Phase

- Ensuring that contact tracers can be mobilized again on short notice should another case or outbreak arise
- Working with Sierra Leone and Guinea at every level to stop contacts from fleeing these countries and entering Liberia
- Contact tracers have been transitioned to active case finders – there are currently more than 10,000 in the country



It's a map before Liberia .What did we do as a priority during the outbreak of Ebola? We formed burial team. We formed surveillance team. We formed these social group. All of these teams were put aside to go and access in their communities taking care of this situation. This is burial team doctor not contact tracers. We have active contact tracing, we have passive contact tracing. What they did was going their communities to go and fish out people who are ill because I remember myself was part of the team, one time went to look for someone who was ill and said, was there a

community? He said, no, it was not there. We're talking and talking but no, we don't have any of them like that. Two hours after we saw dead body coming to outside from their house. They're hiding people because they said that "when people died we're going to bury them. Some believe that if the doctor gives disease to their people." So they're against them. So what we did intervention with contact tracing. Whenever someone had ill, we will do contact tracing. If someone came to a hospital, we'll test them and we'll send to isolation and we'll send to them to do contact tracing and check if everybody have Ebola and fear that one day, all people can be contact that particular patient. We'll be monitoring over a period of 21 days until we're clear and showed there was no more infection and we kept them for 21 days.

Protection and safety management of healthcare workers treating Ebola patients

How can we protect ourselves from Ebola disease infections

- Identify and isolate suspected cases of Ebola
- Protect yourself and your patients:
 - Perform hand hygiene
 - Wear personal protective equipment
 - Stay more than 3 feet from patients
 - Keep patients more than 3 feet from each other
 - Do not touch patients unless essential
 - Do not touch other healthcare workers

Do not do procedures unless necessary and practice them safely

Practice proper environmental cleaning, disinfection, and waste management

Last thing we did was we're the one that are taking care of people. People have sick and come to hospital. How do we protect ourselves? We didn't know how to do it. We have sent burial team. We have sent contact tracer but people were coming. Fever was is part of Ebola. People have malaria symptom as well. So how do we know that this is maybe could be malaria symptom or something else different? Ebola can be bleeding from nose. Some people had a pressure and bleeding from nose. How can we do it? But before we can do that, we decided to train our own


people how to protect themselves. Many people came to help us for massive training of every hospital after the present time. Now we want to enter entire system for Ebola infectious disease situation. Now we've all prepared for that and thank goodness.

The 'heart' of the response- THE WORKFORCE

- The response started with a prior month **HEALTH WORKERS STRIKE**
- We rationalized the current workforce to get the response into gear – health care workers were divided between –**EVD Response and Routine Health care services**
- More workers were recruited , trained ,deployed and paid during the response
- Managing the workforce was a challenge we struggle with through the response especially payment issues
- We have learnt well the need for proper HR Planning and monitoring for future response

CATEGORY OF TEAMS

- 1. Ebola Treatment Units**
 - Health Workers and Support staffs
- 2. Routine Health Workers** and support staffs
- 3 . Response Teams**
 - Case Investigation
 - Ambulance
 - Disinfection
 - Burial
 - Laboratory
 - Contact tracing
 - EPI/Surveillance
 - Psychosocial
 - Health Promotion /Social Mob
 - Dispatch
 - Port Health
 - Coordination (County level)
 - Gate Screening
 - Community care center
- 4. Other support staffs** – EOC ,coordination and response support teams



Strategies for Maintaining Zero

- **INFECTION PREVENTION AND CONTROL**
 - Monitor, regulate, and enforce IPC standards in all public and private facilities
 - Continue training staff in schools and maintaining supply chains for hand washing equipment, thermometers, and other screening and prevention tools
 - Ensure timely referral of all febrile cases for testing and treatment
- **DEEPENED COMMUNITY ENGAGEMENT**
 - Continue community involvement efforts (near and across borders) to sustain gains and minimize resistance
 - Prevent new cases and support health-seeking behaviors
 - Use current social mobilization strategies to encourage ongoing vigilance

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How we've been training primary priority begin started when you suspect of Ebola, one symptom, fever or one or two symptom, we have to isolate you. Every suspected case, you have to isolate person in suspected cases and confirmed cases, we did that. We also emphasized all self-protection because we, healthcare workers cannot abandon the hospitals to run away. So what we did was that we emphasized to every healthcare workers before you can see

any ill person you need to be protected. We need to isolate and protect ourselves.

Thank you so much. Thank you, JICA, for presenting this opportunity. I appreciate that.

Anyway, finally, I want to say to you thank you all for editing them. I want to say thanks for the support and as far as Liberian are concerned, this is what we stand up against depressing time. Thank you so much.

VI. Response for Viral Hemorrhagic Fever in NCGM

Nozomi Takeshita

National Center for Global Health and Medicine,
Disease Control Center

Dr. Takeshita: Good afternoon. My name is Nozomi Takeshita. I work for this hospital and my department is Disease Control and Prevention Center. My specialty is Clinical Infectious diseases . We have infectious disease special units in Japan. If suspected cases of Ebola or MERS or some specific disease are mostly translated this hospital. It is one of main task of our department. My department has main task of job. So today, I'll explain responsible for viral hemorrhagic fever in NCGM Japan. NCGM is my hospital's name.



Problem for VHF in Japan

Target diseases of the Infectious Disease low in Japan

- ✓ It is high impact in public health, not only personal health.
- ✓ Low incidence, poor specific findings
- ✓ Poor experience for health providers in Japan

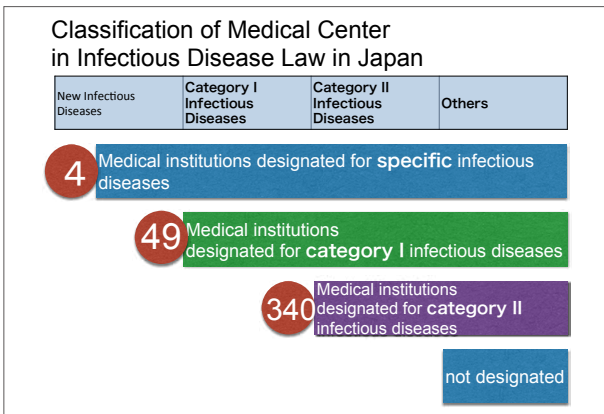
So we have already collaborate with NIID, Japanese government and WHO and quarantine and Tokyo Metropolitan Government. So we have already share the information and some trainings or some methods.

Classification of Infectious Disease Law in Japan

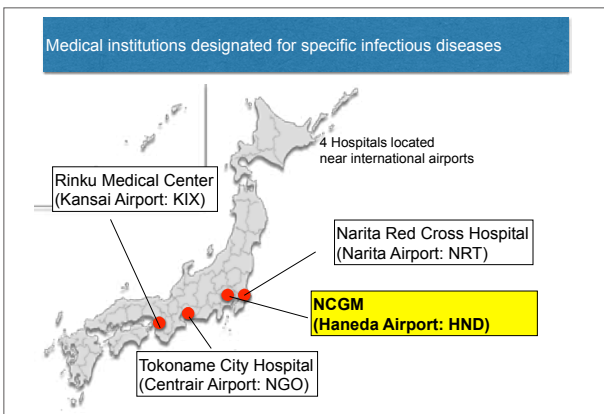
Category 1 (7)	Category 2 (7)	Category 3 (5)	Category 4 (44)
Viral Hemorrhagic Fever EVD Lassa Fever CCHF Marburg disease South American Hemorrhagic Fevers Plague Smallpox	Tuberculosis MERS SARS Avian flu (H5N1/H7N9) Polio Diphtheria	cholera Typhoid fever Paratyphoid fever Dysentery EHEC infection	Dengue Zika Chikungunya Yellow Fever Hepatitis A Legionellosis SFTS Rabies etc...

We have some problems for viral hemorrhagic fever in Japan. Japan is not endemic country for these diseases. So most of cases is transported from other countries. So one of problems is poor experience for health providers in Japan and these diseases are no specific symptoms. If we defined suspected case of viral hemorrhagic fever, specific laboratory is necessary to identify. So most EVD suspected cases are transported to infectious disease institute: National Infectious Disease Institute in Japan (NIID).

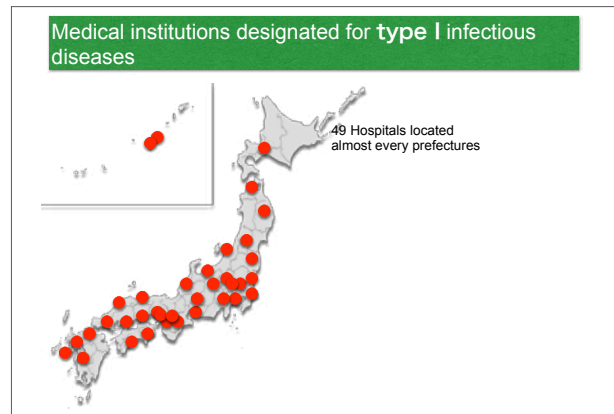
This is Classification of Infectious Disease Law in Japan. We categorized and separated into four. Category 1 is the most severe disease. Ebola hemorrhagic fever is included here and Lassa fever, Crimean-Congo hemorrhagic fever and Marburg are in same category and Smallpox and Plague are same. Category 2 is MERS, SARS and Tuberculosis and Avian Flu. Category 3 is public health high-impact foodborne disease: Cholera, Typhoid Fever, Dysentery and EHEC, O157 are included here. Category 4 is these disease. Dengue, Malaria, Zika, Yellow Fever, Chikungunya and more other tropical disease are included in here.



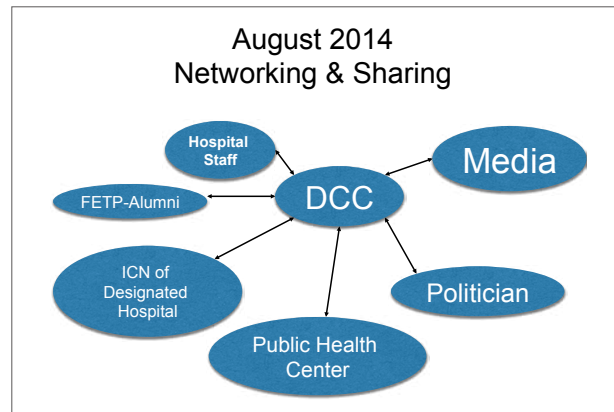
In Japan, infectious disease specific hospital is three groups. Hospital in the category for New Infectious Disease have specific Infectious Disease Ward like this hospital. These hospitals are four hospital in Japan. Next one is category 1 infectious diseases. Category 1 diseases is 49, category 2 is 340. We have the hospital but trained not enough.



This is medical institutions designated for specific infectious diseases. This specific means sometimes for new infectious diseases. Avian Flu is one of examples. At first, we don't include Avian Flu in infectious disease law because it's a new disease. Because we needed time to revise this law, we categorized in specific infectious diseases at first. Now it's a revised infectious diseases law again that avian flu moved to category 2. These hospitals near to the international airports. Narita Airport is near to Narita Red Cross Hospital which has one of the specific infectious diseases hospital. NCGM is near to Haneda and other two is near to Osaka and Nagoya. This is a big international airport.



Category 1 infectious disease is 49. This is each district but not all. Please check here. This is Miyazaki Prefecture. I was born here but his district doesn't have category 1 infectious disease hospital. Most of district has category 1 infectious disease hospital.



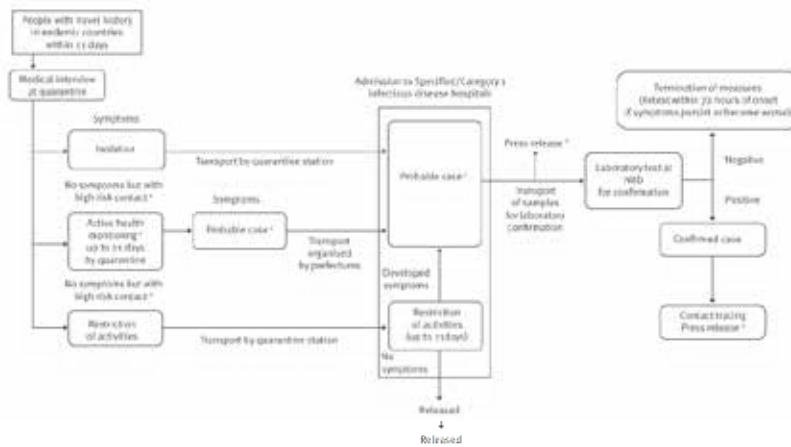
This Ebola virus hemorrhagic fever, at timing of disease outbreak, at first, we made network and sharing, communication with these groups: politician, Public Health Center and FETP which is a surveillance team in Japan and the hospital staffs and media and ICN of Designated Hospital that means category 1 specific infectious disease hospital near Tokyo and some famous hospital.

September 2014
Media Seminar



September 1st, we had Media Seminar. Because at that time, one staff went to Liberia from WHO from our hospital after he came back Japan and presented the situation of that time. Japanese government made case management protocol at the time.

Case management protocol for people with a travel history to EVD endemic countries



Euro Surveill. 2015;20(44).

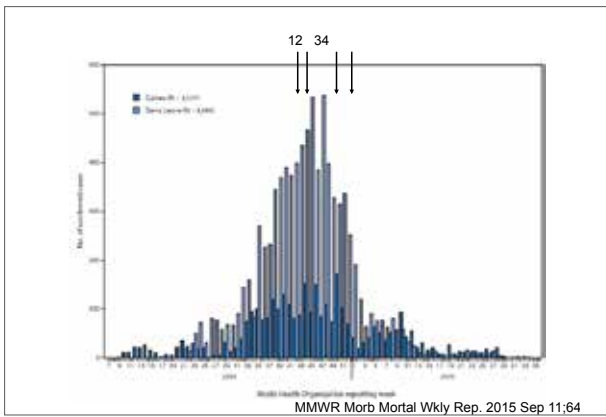
So we can define suspected case by travel history from endemic area and fever. These two points are main focus. If patients fit for these points, patients were moved to these specific hospital. For example, in an airport quarantine,

people were checked the travel history of endemic area and had fever. They transferred to this hospital or some other specific hospital in Japan.

4 suspected EVD cases at NCGM

Cases	date	countries	ebola PCR	duration of isolation	final diagnosis
40s M	2014/10/27	unknown	-ve	3 days	unknown
60s M	2014/11/7	Liberia	-ve	2 days	Streptococcal pharyngitis
30s M	2014/12/29	Sierra Leone	-ve	2 days	sinusitis
70s F	2015/1/18	Sierra Leone	-ve	3 days	influenza A

This is a case management protocol. We have four suspected cases, not true cases. So these four cases are in October, November, December and January, final diagnosis of all suspected cases were not EVD. One is pharyngitis and another is sinusitis. This case is first case in Japan. So many media were hysterical and surrounded around this hospital. Many media: newspaper or TV camera had surrounded here.



9 suspected EVD cases in Japan

Table 2
Cases screened for Ebola virus disease, Japan, August 2014–September 2015 (n=9)

Age group (years)	Sex	Visited country	Nationality	Symptoms	Contact history	Reporting	Diagnosis
20–29 (n=1)	Male (n=1)	Guinea (n=1)	Japanese (n=1)	Fever (n=1)	None (n=1)	During health monitoring (n=1)	Malaria (n=1)
30–39 (n=1)	Female (n=1)	Liberia (n=1)	Undisclosed (n=1)	Body pain (n=1)	Contact to body bag (n=1)	All (n=1)	Malaria (n=1)
40–49 (n=2)		Sierra Leone (n=2)		Cough (n=1)	Undisclosed (n=1)	At quarantine (n=2)	Others (n=2)
50–59 (n=2)				Headache (n=1)			
60–69 (n=2)							
70–79 (n=1)							
80–89 (n=1)							
90–99 (n=1)							

No EVD cases in Japan during this period

Euro Surveill. 2015;20(44):3

Total of nine suspected cases of EVD in Japan. Five cases are transferred to other hospitals. One of final diagnosis is case of Malaria. After moved to the specific hospital we checked malaria at first. Nine of four suspected EVD cases are in this hospital.



This is our institute's PPE: face shield, glasses, N95 mask, double gown, double gloves, shoes covers and boots. In this time, we have only mild cases. So we use only this one.



These pictures are first case of EVD transmitted to our hospital. One of the big issue was actually media communication because we're panic. Many media came to this hospital. And all these people were concerned and came over to monitor the movement in the hospital. So we're surrounded by these so many media. That was one of the big serious issues for us. Dr. Takeshita: Because at that time, Ebola patients were found out and identified in other countries. That is reason which public attention was so high even in Japan around here.

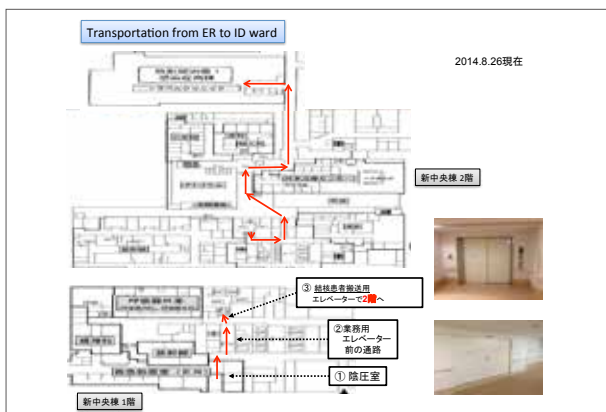
Suspected patient's personal information were released by media or social media though we didn't know yet. Those private information have already not leaked from us but gained by public broad media in those days. Currently we have 800 beds here and also we have many outpatients per day. Number of ambulance of this hospital are also highest in Tokyo. So, we need explain many information not only for patients but also for staff of this hospital.

For the people near here, their concerns had risen so much. That is one of reason which we had certain timing to explain the exact situation for to the outpatients and inpatients in this hospital to let them calm down. We have received some Ebola suspected patients in here and we received and accepted them. However, we have still enough capacity to take care of other serious patients of other diseases. We wanted to send this message to the people.



We basically followed this management process flow. Actually new facilities to accommodate infectious disease or epidemic diseases patients, it was established at the time of the SARS. Then at the time, we established at certain guidelines to take for SARS, Avian Flu and we revised it as well. After the SARS outbreak we established guidelines, we proceeded this procedure. So we regularly have education not only to this hospital but also to other hospitals how to handle such diseases in Japan. We've continued to educate and train.

Now, we faced to Ebola suspected cases. Then afterword, we have meeting to access the results. For the next outbreak, we will repeatedly followed this guidelines.



This is one of the examples. This is some example for suspected patient to be brought into certain isolated route from the entrance brought by an ambulance. We established this guide and the map for easier understanding because not always the same person handle this one. So anybody can handle the order for that easily, we established that guideline or map.

We prepared protocol for severe EVD disease patient. For example, communicating with intensive care unit specialist or how to use Favipiravir or how to use globulin. But this time, we have only experienced suspected case or mild case.

Main Working for EVD

- ✓ communication
 - patient, staff, citizen
- ✓ transportation
 - patient, samples
- ✓ Hand hygiene & PPE
 - training, training ,training.....

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This period, our main working for EVD is communication, transportation and hygiene, PPE. Now we've prepared for skill up of PPE for EVD. PPE: double grove, double gown. We are training every week. Tomorrow, four radiologists, and two medical engineer, one ID fellow, one emergency department doctor will join, and next week, other nine people will join. So every week, continuously we do it and we simulate every two or three months with communication tool and transportation. If we have chance, I'll show our department in detail. Thank you very much.



VII. After the Session

■ Questions and Answers

Dr. Sakurada: Thank you very much, Mr. Takeshita. Next is discussion time. Any comment or question from floor?

Dr. Hoshi: Thank you very much. I'm very much impressed by your lecture. My name is Sakuo Hoshi. I'm from general manager of Yurin hospital. I will meet to all of you on August 9th at our hospital. Anyway, my question is that it was not the past time to occur Ebola in Africa but it was a first time to occur Ebola outbreak in Africa. So I want to ask you why some papers said WHO does not respond quickly at first. Others said Ebola occurred at rural area but this time, it was a first time to occur at urban area. So many patient moved around by cars or something and some of you said it was the first time to meet Ebola patient at your country. So I want to know why, what the most important reason. Why outbreak occurred?

Dr. Musa: Thank you very much. Before my colleague talk, first, let me correct this. We say Africa compared to Japan. Africa more than 52 countries. So something is happening in Uganda or happening Liberia, maybe you would say East Africa. What is happening in East Africa, it's not in West Africa. It's very large. So I very first time went to Liberia, Sierra Leone and Kenya. It's the very first time, so we didn't know about anything about anything before. There was difference in it. Thank you.

Dr. Hoshi: Okay. Thank you.

Dr. Sakurada: Other questions or comments?

Dr. Phone: I came from Laos. If you have suspected case of Ebola, foreigner visitor only nine cases but what did you do? After suspected, you'd been to hospital, you wear worn PPE or something else?

Dr. Takeshita: These nine cases are all transferred to the

specific hospital and we'd cared by the PPE before the diagnosis. After the diagnosis and check the PCR negative, we'd transferred to the normal ward or sometimes discharge.

Dr. Musa: My question is to Japanese. I know there wasn't outbreak of the SARS virus. I just want to know what your actual response was when the outbreak started in your country.

Dr. Takeshita: At that time, at first, this hotspot is China near to Japan. So we prepared. I only heard the situation of SARS later. At first, we prepared public response team and specific ward because we had infectious disease specific ward by infectious disease law. For example, smallpox or some viral hemorrhagic fever, SARS were no case in Japan. SARS is one of the turning point because outbreak area is near to Japan and spread to world. So Japanese government changed the policy to prepare for these diseases and establish a new word or new laboratory method.

Dr. Teo: I'd like to respond to a clarification to important issues. One of the questions was asked why WHO didn't declare the outbreak in West Africa. The issue is that especially answer that the disease in West Africa was the first time but again, well communication we need to do was surveillance system for information. So possibly during March and April, of course, I've worked in West Africa as well and Africa.

So during those days, even Sierra Leone and Liberia did not recognize that this is Ebola. So it was not easy for them to report WHO. Who is announcing outbreak or not? So it was not that much clear if this is Ebola. That just that why there was delays. Although, this is not concrete answer which was supposed to be given but I know because I was there as well. Another point is that Dr. Sakurada said "I don't know why in these photo, only person was standing while one of them is only standing." If one person enter in Ebola

treatment unit, possibility of contaminating is high. So the current protection mechanism you need to have somebody is called buddy. All of the buddy is to observe infection prevention precautions. So I will be there wearing PPE but observing what my buddy is doing and I need to instruct this buddy is okay because this is really highly contagious disease. But another thing is you may be supporting and documenting some patients but you cannot touch the patients. So currently nobody is entering ETU alone, not less than two persons going. So this is the answer to why the other one was just standing. He's not standing, observing for IPC. Thank you.

Dr. Sakurada: Thank you very much.

Dr. Rich: Ebola is previously carried by mangos and bats. After people eat mangos and bats, chance is there; we would infect Ebola. As of today, people are still mangos and bats. Why are they not contacting Ebola?

Dr. Kamara: Good afternoon, again. Thank you very much for that question. The picture that colleague was trying to wear is transmission boot of infection. Raw animals and plants or fruits are not affected by the diseases but if you eat any of those animals, you'll expose yourself to be infection and we require just one contact with that to have an outbreak among humans. So, for now, declaration we did was end of human to human transmission but yet still, we still have monkeys and bats still existed. That's why it is ongoing that people stop eating those animals in the bush because we might be unluckily to feed on one of them

that is probably has virus in its body. So for now, people are still eating them but generally you don't know maybe if what you're eating do not have virus in their body and also because of the awareness and campaigns that we're going on to avoid eating bushmeats. Up to now, most people avoid eating them. I know most people eating them but maybe they've fortunately not be exposed to that but for now, people are so conscious and avoiding to eat any bushmeats. So probably that is reason why the animals are here but anything outbreak happened. Thank you.

Dr. Takeshita: I have one question. How did you manage the first case? Because identification is very important to prevent outbreak. So how do you check first case?

Dr. Kamara: We all know that it was difficult to identify suspected cases because at the time of the outbreak, we had no mechanism of this to do the testing, no facilities or treatment and even in the community, people were not aware of Ebola virus. So the first case I suppose for all affected countries, we got them, confound after they died most cases in early cases, we had. It was opened when they died and subsequently when we started tracking some of those cases, we actually some cases we were fortunate that like early reporting, depending on the symptoms or stages, sometimes it's possible for you to be treated and you survive depending on the time of going to the hospital. Sometimes you try because when you're waiting for the results. The patient is been treated symptomatically, you take care of temperature or fever and everything. So fortunately depending on the timing to go to the hospital



and on your immune status at that time, you might survive but high death rate related to Ebola was as a result of polymerase chain reaction because of the similarity of infection to other factious diseases and rare diseases. So most of the first cases, we're not able to manage them. We've got to know about them through community mobilization. People tell you to know that there is a dead body there and you go and you take the swab that's how we actually find out most of the early cases. Thank you.

Dr. Kaly: In addition about that, now after Ebola, post-Ebola now, Now, we don't have any active case but we have rapid response team. Their rapid response team is now effective. We don't say because we don't have Ebola. Everybody we saw was composed by contact tracing. We have to help promotion and social mobilization. Just if we continue to maintain this rapid response team free from any outbreak. Thank you.

Dr. Takenaka: Thank you very much for your presentation. My name is Dr. Hiro from JICA in Tokyo. I have visited Sierra Leone four times before and after the outbreak and I'm institutional gynecologist. I want to share my experience as a gynecologist. In January this year, I have visited Freetown. I was working in PCMH. This is the tertiary hospital in Freetown for the maternity. One day, we have received one case, full-time pregnancy with previous Cesarean section in shock. We have suspected the uterine rupture. I wanted to buffer of the Cesarean but very much unfortunately the previous day, just one case of Ebola was appeared in the northern part of Sierra Leone. So the operation team was refused the case to let the patient into the operation theater until negative result is proved. It took two hours. The patient died before going to room. I very much understand the situation but what we need to know is Sierra Leone, directly provided Ebola virus is about 4,000 including 200 medical workers but in the back of the number, indirect case of Ebola might be double or triple. Now the international society is claiming that resilient health system is needed in the African continent but we also need to know that if we compare the number of the medical workers, for example, if we compare the number of the medical workers with Sierra Leone and Japan, we have 60 times numbers of doctors and 60 times numbers of nurses. It means we cannot tolerate again in the African continent because in this situation, like I think, now, vaccination or the treatment medicine is not commercially available for Ebola, right? So prevention is very much important and rapid response is very much important. I think that every member of us should recognize

that even after this post-Ebola era, financial or technical or physical investment and cooperation is very much needed. Thank you very much.

Dr. Sakurada: Dr. Kanai, please.

Dr. Kanai: Thank you very much for good comment, Dr. Takenaka. I'm also working for the JICA headquarters. My name is Dr. Kaname Kanai working for the human development department. I'd like to share my experiences and also my idea. I joined the contact mission to Guinea. It was 2015 February. At that time, we joined the government mission. Nine members from Ministry of Health, Ministry of Foreign Affairs, Ministry of Defense and other organization, also JICA. Seven member out of nine medical doctors. So we saw the conditions of Guinea and medical center, Ebola treatment center in Conakry and MSA handling and also we saw Ebola treatment center French military handled. One Ebola treatment center was handled by AU, African Unions. So we knew some countries had experienced, some doctors were specialist of Ebola. So in Africa, they share experiences. In the Ebola treatment center handle by AU, doctors from Congo, Uganda and Zambia joined and treated there. So at that time, I could see the patients three meters away. So I felt like it's safe but if you don't know what we can be infected. That must be fear. Anyway, my opinion or JICA's idea: capacity building, capacity of human power. You are here. Also capacity building with laboratory and surveillance is important. So if you have any idea, please let us know. We're working for it together. Thank you very much.

Dr. Sakurada: Thank you very much, Dr. Kanai. Personally I think it is very, very difficult to develop anti-Ebola virus agent and vaccine compare to developing vaccine of HIV, malaria and dengue. Why we have not such compound or vaccine for long time? I think that is just simple reason. That is benefit for pharmaceutical companies, right? But it is the time to develop such medicine or vaccine. This is my personal opinion.

Is there last question or comment, last one? Thank you very much. Time is over. Now we released from our duty. Thank you very much, everybody.

Mr. Moriyama: Thank you very much, Dr. Sakurada. We would like to conclude this Ebola session. Thank you for kind participation and cooperation. Thank you very much.

All: Thank you.

■ Participants' Comments

Ms. War: Just for Ebola, I have no experience at all. Ebola virus patients but your kindness of sharing Ebola experience, I have many, many knowledge and I use in IPC. Thank you very much.

Ms. Deborah: For me as a person, what I discovered from lecture is that during Ebola time or during this outbreak, the work is too much for us and some health workers ran away. So when they ran away even though we're few, the work had become too much for us and our government, for us like ours, they don't even consider the work which we do because the doctor was trying to tell us. They were not even motivated and even that's what happened in Uganda, even if they might be there. We did not even get it. So what I'm saying is that we should, our government also should motivate us so that we do. Motivation is not only through money, even appreciating itself is enough for people to be motivated but maybe those who went to Liberia, they're aware they received it but those others for our districts, we do not see. So I think our government should know that when we have offered to care for these patients, we're clearly offered otherwise many people run away from there. Health workers, they run away and they leave patients.

Dr. Kaly: I think you told us to situation what we talk about. We realized that it get respond in Tokyo. The health workers in Liberia was delivered between Ebola virus disease team and health workers but it's not work place as much as we can see. Most of the health workers have their job away because they're not motivated. Motivation is not just one issue but appreciation. They don't appreciate.. Everybody was afraid. That means we have this relation we got to implement the proper system. We don't have but I suggest we always do the inception report presentation. You have 125 hospital beds while you have just two medical doctors. We took 125 hospital beds and still we have nurses got ill in over 125 hospitals, patients is died. I think teaching what to do is proper training. Thank you.

Dr. Richard: Thank you for the comments. Lastly, from Lao.

Dr. Phonedavane: For me, I have learned about Ebola management from Sierra Leone, from Uganda. In our country, we have found out this and we tried to our way of, we tried to prepare. I really not know how hard you're working for fighting with this Ebola. Ebola disease is really serious. Today, I heard from your report many, many people was dying. 50 percent died for Ebola. We lost our



close friends and we lost our medical doctors. It's really big loss for our medical and health service. I think right now, we've already solved this problem. How about in the future? We have to prepare. We don't know when it occurs or which country is going to occur this even, but I think after this cause we already know how to prevent or control infections. That's be together a few how to manage y infectious disease. I think first, we should have what we've already learned about pyramid of management, all right? I think we start from here especially doctor from here Japanhe keep us lectured what we've learned with people because he tell us they has nine case suspects. Many, many people want to know and then came here, want to what happened, it's really Ebola or the other disease that means they have to do as people, for media to know what Ebola is and other serious infectious disease. I think we try to do the best infectious control. Thank you.

Ms. kargbo: Dr. Nozomi's presentation, they respond in connection with nine suspected cases which maybe they do communicating to the general public. To bring down their fears, anger, the blame. So when we go out there to educate them, we get their cooperation. So we believe as said I think the management process which our beloved country Japan took is very good to pick up to make a copy



and represent our countries. How they did, suspected cases they had, fears, anger, believe, to education, training, practices, assessments and changing of man behavior, I think the consequence of Ebola in our countries would have been much better.

Dr. Richard: Thank you. That's the end of today's program. I have a coordinator for tomorrow's great forum.

**Program for the Specialist of Healthcare-Associated Infection Control and Prevention
Knowledge Co-Creation Session “Sharing the Experiences of Ebola Outbreaks”**

Introduction

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Risk Management in Response to the Ebola Virus Disease Outbreak

Shinsaku Sakurada

National Center for Global Health and Medicine, Japan
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JICA's Response to Ebola Outbreak

Akiko Saito

Associate Expert,

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Sharing Experience on Ebola Outbreak in Sierra Leone

Masiray Colojumah Kamara

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Response for Viral Hemorrhagic Fever in NCGM

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