Report

-Survey of Japanese Red Cross Personnel

on their Relief Activities

during the Fukushima Daiichi Nuclear Power Plant Disaster-

(English translation)

October 31, 2013

日本赤十字社
Japanese Red Cross Society

Introduction

The Japanese Red Cross Society (JRCS) conducted a survey of the JRCS relief personnel on the relief activities and the issues they faced during the nuclear disaster that followed the Great East Japan Earthquake that occurred on March 11, 2011. This report contains the survey results.

Shortly after the earthquake and the nuclear accident occurred, the JRCS began to provide support including medical relief activities in Fukushima. However, the JRCS was not able to provide enough relief activities immediately after the nuclear accident.

This was caused partly by the lack of preparedness in the areas of: information gathering, protective radiation gear and equipment, and cooperation with external groups/organizations. The JRCS thinks that it is important to have information, knowledge, equipment and a code of conduct in place in the event of a nuclear disaster. The JRCS believes that it is also the mission of the Red Cross to disseminate the collected information externally.

At the 2011 General Assembly, the International Federation of Red Cross and Red Crescent Societies adopted a resolution on ‘Preparedness to respond to the humanitarian consequences of nuclear accidents’ to enhance the National Societies’ preparedness to nuclear and radiological accidents.

With this as a backdrop, the JRCS has launched the Red Cross Nuclear Disaster Resource Center. Based on the JRCS experiences and lessons learned from the relief activities after the Great East Japan Earthquake and the Fukushima Daiichi Nuclear Power Plant accident, the center will work on providing communication of information on responses to nuclear disasters. This survey was conducted as part of the information dissemination.

In the survey, relief personnel and persons involved in the relief activities were interviewed and asked questionnaires. This report was prepared based on those results. The JRCS greatly appreciates their cooperation.

The report was prepared in cooperation of the Japan Research Institute, Limited.

The report presents neither any JRCS evaluation nor official view on nuclear power generation.

Red Cross Nuclear Disaster Resource Center
Japanese Red Cross Society

October 31, 2013

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Chapter I: Purpose and Outline of the Survey

1. Background and purpose of the survey

(1) Background of the survey

The Japanese Red Cross Society (JRCS) provided various support activities including medical relief after the Great East Japan Earthquake and Tsunami. In Fukushima, the nuclear disaster was caused by the Fukushima Daiichi Nuclear Power Plant accident. During the disaster, the JRCS had an unprecedented experience, which forced them to face constraints in their relief activities in Fukushima. The JRCS thinks that they should review their activities and work on the issues they faced. The main reasons for the constraints are believed to be lack of a prepared manual on such items as a code of conduct and safety criteria in the event of a nuclear disaster, and lack of information on radiation. To clear those issues, the JRCS is preparing guidelines for relief activities under a nuclear disaster. The JRCS has also launched the Red Cross Nuclear Disaster Resource Center to prepare the guidelines and share the collected information with people in Japan and abroad. The center has already begun to collect and publish information.

In order to gather basic information for preparing the guidelines and create content which can be disseminated, it is a must to have the records in place from the medical relief activities (main parts of JRCS supports in a disaster) in Fukushima and summarize the issues. In this context, the JRCS decided to conduct a survey mainly to the relief personnel involved in the relief activities in Fukushima for their views.

(2) Purpose of the survey

It is assumed that the survey results can be used as basic information in preparing the guidelines for relief activities under a nuclear disaster and its contents to be disseminated from the Red Cross Nuclear Disaster Resource Center. To fulfill the assumption, the survey was conducted to the relief personnel involved in the relief activities in Fukushima for their views on their activities to understand what happened and what the issues were, and to summarize these results for the JRCS to utilize and disseminate.

2. Outline of the survey

(1) Survey content and steps

The survey was conducted as follows:

1) Understanding and summarizing of the JRCS relief activities conducted in Fukushima

   The related documents at the JRCS and the Japan Research Institute, Limited (JRI) were scrutinized to objectively understand and put together what relief activities the JRCS relief teams did in Fukushima. The results were used for the questionnaire and interview surveys and reflected on the report.

2) Interviewing with the relief personnel and the staff at the JRCS National Headquarters, chapters and hospitals/centers involved in the relief activities

   The interviewees were classified based on the activity periods, places and roles (occupations). They were interviewed extensively. Some persons belonging to organizations than the JRCS were interviewed as well.

3) Asking questionnaires to the relief personnel

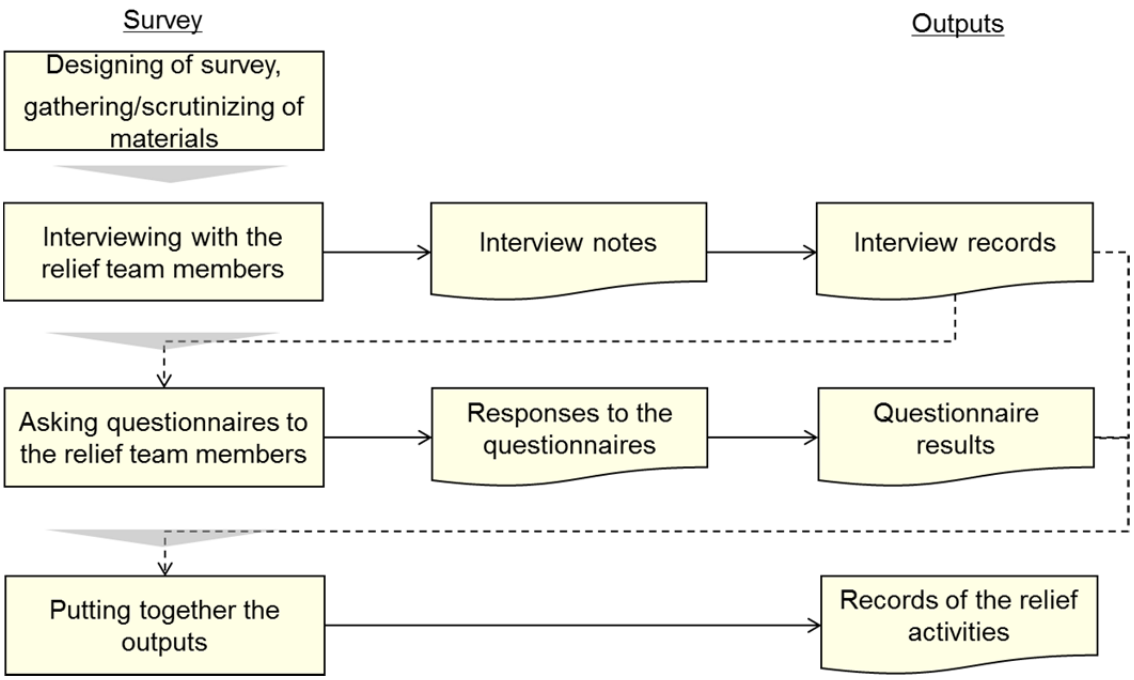
   An online questionnaire survey was conducted to the relief personnel involved in the relief activities in Fukushima to supplement the interview survey.

4) Summarizing of issues, considering of suggestions and reporting

   Based on the survey results, the JRI considered the issues in the JRCS relief activities in Fukushima and suggestions for the future activities, and summarized them into the report. The report consists of sections which can be also separately utilized for external dissemination.

The steps for the survey are shown in Chart 1 as below.

Chart 1: Steps for the survey



For this survey, the activity periods were categorized into the phases shown in Chart 2. Based on the phases, the persons to be surveyed were selected and the questionnaire survey was designed. The interview survey was designed mainly for the first response period (Phases 0 and 1 in the chart below), in which the greatest constraints were believed to occur during the relief activities.

Chart 2: Phases according to the activity periods of the JRCS relief teams in Fukushima

	Period	Outline
Phase 0	Shortly after the earthquake on March 11 — Nuclear accident on March 12	• Relief activities conducted from shortly after the earthquake to before the nuclear accident (the hydrogen explosion at Unit 1) • Shortly after the earthquake, the JRCS conducted relief activities as DMAT (Disaster Medical Assistance Team), but left for Miyagi or withdrew due to the nuclear accident.
Phase 1	Nuclear accident on March 12 — Closing of the meeting for relief activities under the radiation environment on March 13	• Relief activities conducted from shortly after the earthquake to closing of the meeting for relief activities under the radiation environment held on evening of March 13, where the relief team leaders participated in and a decision was made. • A decision was made that all the relief teams except for the Fukushima Chapter relief team should withdraw.
Phase 2-1	Decision making for the relief activity principles by the National HQ on March 15 —	• Mobile clinic activities provided at the evacuation centers in the City of Fukushima and at the first aid center at the Azuma Sports Park after the National HQ's decision on March 15 • During this period, the evacuees were most concerned about radiation.
Phase 2-2		• Mobile clinic activities provided in Aizuwakamatsu for the evacuees from the designated evacuation area after the National HQ's decision on March 15 • Consultations not only for physical condition but psychological condition
Phase 3	May 10 —	• Relief activities provided for the evacuees during the temporary re-entry program to the restricted area • Low priority of the survey for this phase, because only a small number of people received medical treatment during the program.

(2) Interview survey

The interview survey was conducted as shown in Chart 3 below. The interviewees were selected in the discussion between the JRCS and the JRI. The interviews were performed by the JRI staff and summarized in the interview notes.

Chart 3: Interviews

Activity Phase	Organization	Occupation/Title	Prefecture	Interviewed on:	Remarks
0	Japanese Red Cross Medical Center	Physician	Tokyo	2013/7/1	
	Yokohama City Minato Red Cross Hospital	Physician	Kanagawa	2013/7/3	
	Nagaoka Red Cross Hospital	Physician	Niigata	2013/7/2	
	Nagaoka Red Cross Hospital	Nurse	Niigata	2013/7/2	
	Nagaoka Red Cross Hospital	Administrator	Niigata	2013/7/2	
1	Takamatsu Red Cross Hospital	Physician	Kagawa	2013/7/11	
	Takamatsu Red Cross Hospital	Nurse	Kagawa	2013/7/11	
	Japanese Red Cross Kochi Hospital	Physician	Kochi	2013/7/19	
	Kochi Chapter	Administrator	Kochi	2013/7/19	
	Japanese Red Cross Nagahama Hospital	Physician	Shiga	2013/7/18	
	Japanese Red Cross Nagahama Hospital	Nurse	Shiga	2013/7/18	
2-1	Yamanashi Red Cross Hospital	Nurse	Yamanashi	2013/8/8	
2-2	Japanese Red Cross Nagahama Hospital	Physician	Shiga		Interviewed on 2013/7/18 at the same time for Phase 1
	Japanese Red Cross Nagahama Hospital	Nurse	Shiga		
	Japanese Red Cross Yamagata Blood Center	Administrator	Yamagata	2013/7/9	
Red Cross Hospital in the affected area	Fukushima Red Cross Hospital	Physician	Fukushima	2013/6/26	
	Fukushima Red Cross Hospital	Nurse	Fukushima	2013/6/26	
Red Cross Blood Center in the affected area	Japanese Red Cross Fukushima Blood Center	Nurse	Fukushima	2013/6/26	
Chapter in the affected area	Mayor of Kunimi	Former Secretary General of Fukushima Chapter	Fukushima	2013/7/23	
	Fukushima Chapter	Deputy Secretary General	Fukushima	2013/6/26	
		Director of Operations Division	Fukushima	2013/6/26	
		Director	Fukushima	2013/6/26	
		Deputy Director of Operations Division	Fukushima	2013/6/26	
Radiological coordinator	Japanese Red Cross Nagasaki Genbaku Hospital	Physician	Nagasaki	2013/8/6	
	Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital	Radiological technologist	Hiroshima	2013/8/7	
JRCS HQ	Japanese Red Cross General Welfare Center	Former Director General of Disaster Management and Social Welfare Department	Tokyo	2013/10/11	
	Japanese Red Cross Musashino Hospital	Physician	Tokyo	2013/6/24	
	Social Welfare Division	Director	Tokyo	2013/7/18	
	Safety Services Division	Director	Tokyo	2013/6/5	
Block/Chapter of the relief teams dispatched	Tokyo Metropolitan Chapter	Director of Disaster Management Division	Tokyo	2013/7/18	
	Tokyo Metropolitan Chapter	Secretary General	Tokyo	2013/7/18	
	Disaster Preparedness Planning Task Force	Director	Tokyo	2013/6/5	
Red Cross Hospital of the relief team dispatched	Japanese Red Cross Nagahama Hospital	Manager of Social Relations	Shiga	2013/7/18	
DMAT	National Disaster Medical Center	Physician	Tokyo	2013/8/5	

(3) Questionnaire survey

The questionnaire survey was conducted mainly to the 2nd Block (Kanto and Koshinetsu Regions) staff of the relief personnel involved in the relief activities in Fukushima. The details of the survey are as follows:

Outline of the questionnaire survey

1. Purpose:
   To quantitatively understand the relief personnel's views on the relief activities in the nuclear disaster which followed the Great East Japan Earthquake and Tsunami and to supplement the interview survey.

2. Outline of the questions:
   - What relief activities the relief personnel provided after the nuclear accident
   - Views which the relief personnel had during the relief activities
   - Issues and views which the relief personnel had when they left Fukushima
   - Comments on the newly established "Guidelines for Relief Activities under Nuclear Disasters"

   etc.

3. Persons surveyed:
   Persons who were involved in the relief activities in Fukushima after the nuclear disaster occurred
   (139 persons mainly of the 2nd Block responded to the questionnaire.)

4. Period surveyed:
   October 9 – 18, 2013

5. Survey method:
   On-line questionnaire

Chapter II: Outline of the JRCS Relief Activities in Fukushima

1. JRCS relief team activities in Fukushima

(1) Outline of the JRCS relief team activities

JRCS relief teams were sent to the affected areas for about six months starting from March 11, 2011 to September of the same year. In total, 896 teams and 6,492 members were dispatched, of which, 139 relief teams were dispatched to Fukushima. (In addition to those teams, 7 teams were sent to more than one prefecture: Iwate, Miyagi and Fukushima.) They were sent mainly to the northern Fukushima area (73 teams) and Aizu area (54 teams). The chapters which provided relief activities mainly in Fukushima were Yamagata and Fukushima Chapters of the 1st Block (Tohoku and Hokkaido Regions), and all chapters of the 2nd Block. In addition, Shiga and Kyoto Chapters of the 4th Block (Kinki Region) took on most of the relief activities in Aizu area.

The relief activities in Fukushima were terminated in June 2011. Even after that, the relief activities were continued for the temporary re-entry program to the restricted area which had been designated after the Fukushima Daiichi Nuclear Power Plant accident. (These activities are not included in the above relief team counts.)

(2) Outline of the first response team activities

Soon after the earthquake occurred on March 11, 2011, JRCS relief teams provided medical relief in the affected areas.

The number of the JRCS first response teams which departed for the affected areas on the day of the earthquake was 55. The number of the JRCS DMATs (Disaster Medical Assistance Teams) was 22. Of those teams, 13 relief teams were dispatched to Fukushima. After the nuclear accident happened, 6 of the 13 teams moved to other prefectures and continued to provide relief activities. The JRCS first response teams in Fukushima are shown in Chart 4.

Chart 4: Outline of the JRCS first response teams dispatched to Fukushima

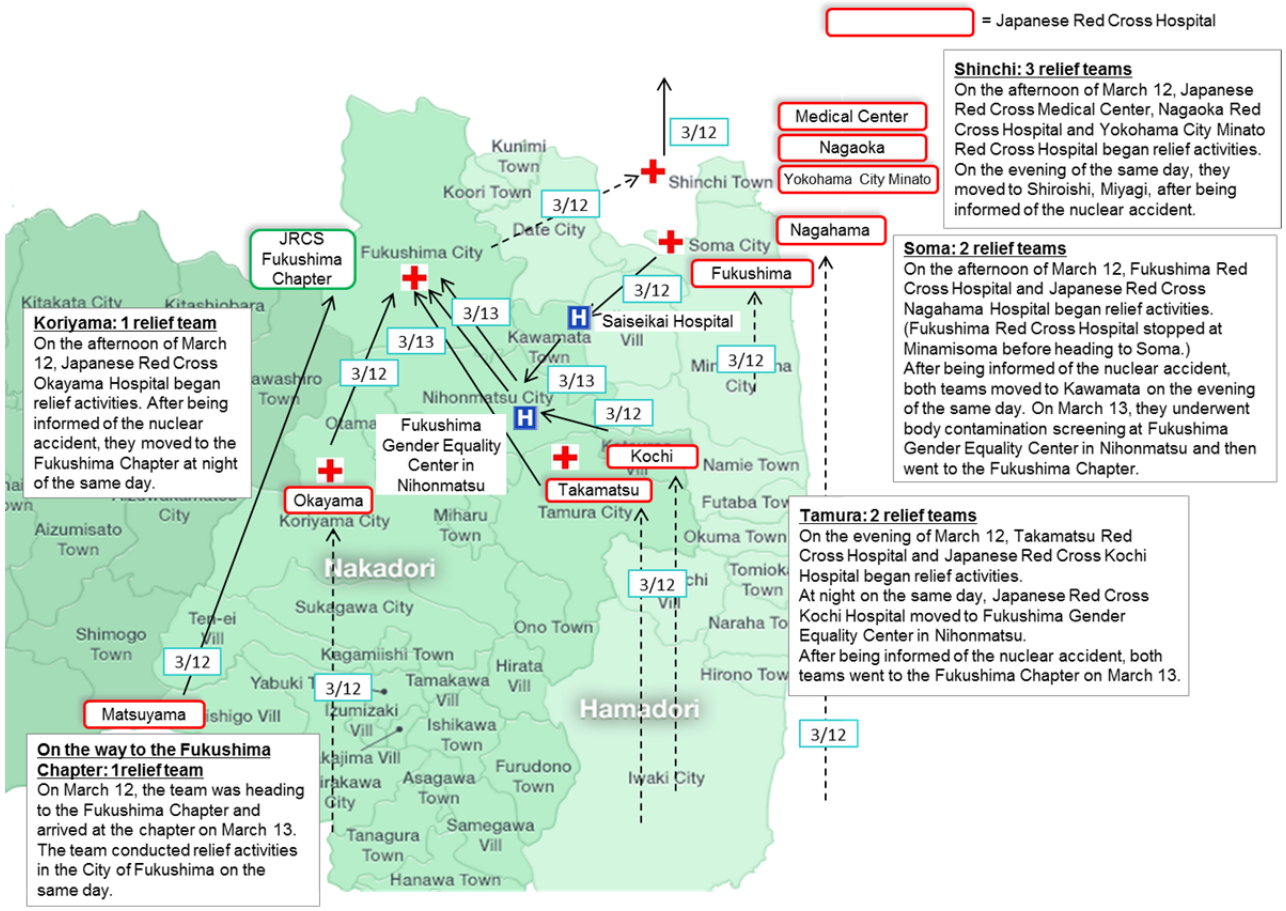
Block/Prefecture:		Dispatched from:	Team type	N. of members	Dispatched to:	Activity place:
	National Headquarters	Japanese RC Medical Center	1 DMAT	5	Fukushima and	Minamisoma City Hospital →Shinchi →Shiroishi
1	Fukushima	Fukushima RC Hospital	1 DMAT	5	Fukushima	Minamisoma City Hospital
2	Gunma	Maebashi RC Hospital	1 relief team/ DMAT	8	Fukushima	Fukushima Medical University Hospital (FMUH)
	Tokyo	Japanese RC Musashino Hospital	1 relief team/ DMAT	7	Fukushima and Iwate	FMUH→Iwate Medical University Hospital→Ofunato Hospital

2	Kanagawa	Yokohama City Minato RC Hospital	1 DMAT	5	Fukushima and Miyagi	FMUH→Shinchi→Shiroishi
	Niigata	Nagaoka RC Hospital	1 DMAT	7	Fukushima and Miyagi	FMUH→Shinchi→Shiroishi
3	Nagano	Nagano RC Hospital	1 DMAT	7	Fukushima	FMUH
4	Shiga	Otsu RC Hospital	1 DMAT	6	Fukushima	Fukushima Airport
	Shiga	Nagahama RC Hospital	1 relief team	8	Fukushima	Hamanasu-Kan and others
	Tottori	Japanese RC Tottori Hospital	1 JRCS (Tottori) DMAT	6	Fukushima	Fukushima Airport
5	Okayama	Japanese RC Okayama Hospital	1 relief team	7	Fukushima	Saiseikai Hospital in Kawamata
	Kagawa	Takamatsu RC Hospital	1 dERU (domestic Emergency Response Unit)	14	Fukushima and Miyagi	Tamura Gymnasium/Camp Kasuminome of the Japan Ground Self-Defense Force
	Kochi	Japanese RC Kochi Hospital	1 relief team	9	Fukushima/ Miyagi	Tamura/Ishinomaki Red Cross Hospital

(3) Relief activities in Fukushima

Of the JRCS relief teams sent to Fukushima on March 11, the three DMATs (Japanese Red Cross Medical Center, Nagaoka Red Cross Hospital and Yokohama City Minato Red Cross Hospital) left the DMAT command structure on the morning of March 12 and started relief activities as JRCS relief teams in Shinchi. On March 12, Nagahama Red Cross Hospital and Fukushima Red Cross Hospital (in Soma), Japanese Red Cross Okayama Hospital (in Koriyama), Japanese Red Cross Kochi Hospital and Takamatsu Red Cross Hospital (in Tamura) began to conduct relief activities in Fukushima. As of the evening of March 12, these relief teams were providing relief activities as shown in Chart 5.

Chart 5: The JRCS relief teams as of the evening of March 12, 2011, when the nuclear accident was informed.



Note: The chart refers to the JRCS relief team activities only from the survey results.

The teams on relief activities in Fukushima received the orders from the evening of March 12 through March 13 to tentatively leave the affected area, because it became unclear whether or not the safety of the JRCS relief team members could be secured due to the nuclear accident. The three relief teams from Japanese Red Cross Medical Center, Nagaoka Red Cross Hospital and Yokohama City Minato Red Cross Hospital in Shinchi left to Shiroishi, Miyagi. The five teams from Nagahama Red Cross Hospital, Japanese Red Cross Okayama Hospital, Japanese Red Cross Kochi Hospital, Takamatsu Red Cross Hospital and Fukushima Red Cross Hospital withdrew and went back to the Fukushima Chapter by the end of March 13. Matsuyama Red Cross Hospital also started relief activities in the City of Fukushima on March 13.

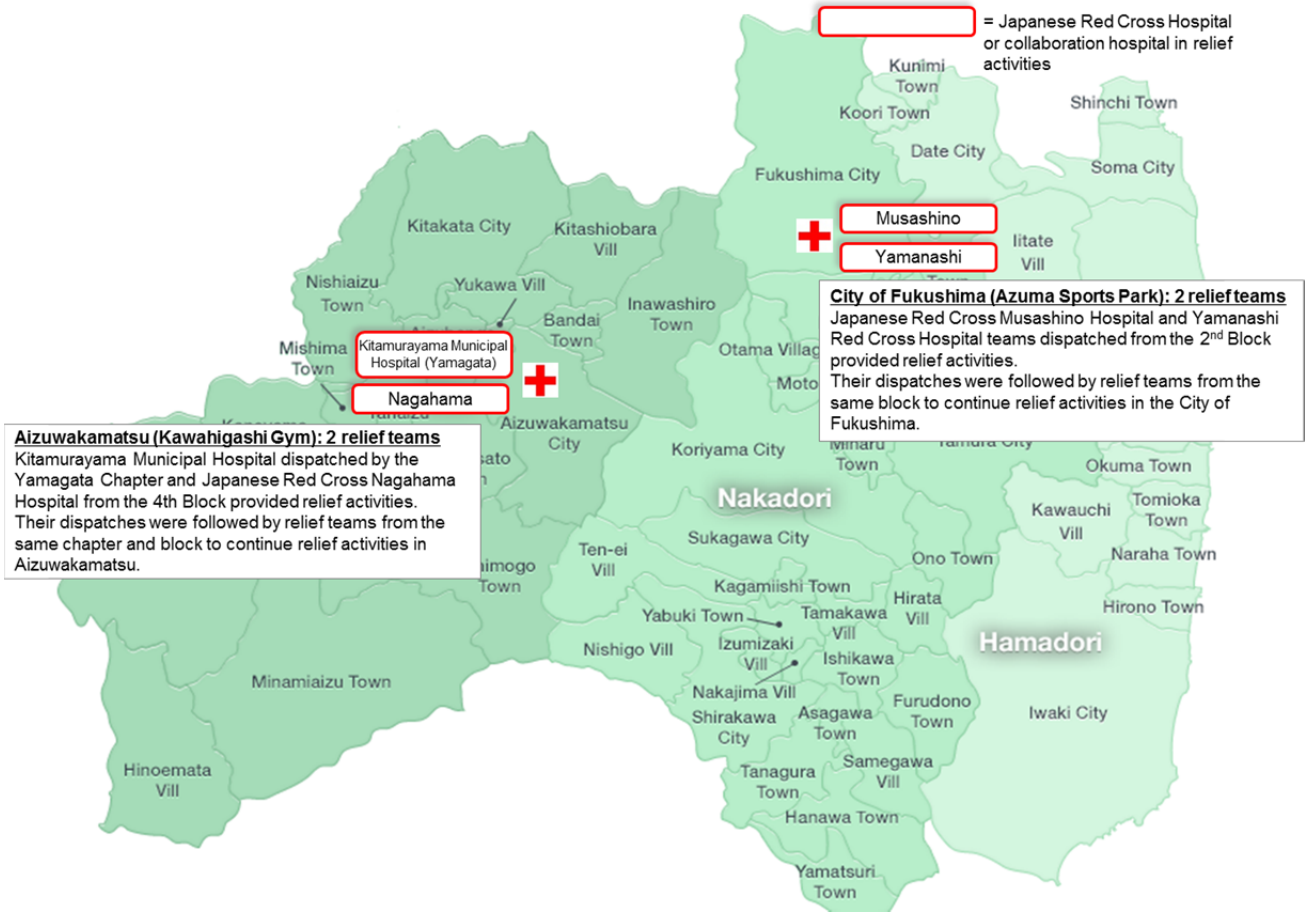
On the evening of March 13, a meeting for relief activities under the radiation environment was held at the Fukushima Chapter office. The participants were the Fukushima Chapter staff, the Fukushima Chapter relief team, a coordinator from the Niigata Chapter, physicians, chief nurses and administrators of all the relief teams from other chapters. They made a decision that each relief team should seek their chapter or hospital for orders, because the Fukushima Chapter Disaster Response Headquarters could not take measures to ensure the safety of each team member for relief activities under the radiation environment.

From the night of March 13 to 14, the relief teams dispatched from other JRCS chapters left Fukushima. On March 14, the only relief team working in Fukushima was the Fukushima Red Cross Hospital Relief Team. The JRCS relief teams from other chapters who provided relief activities in Fukushima between March 15 and 17 were only Tsuruoka Municipal Shonai Hospital from the Yamagata Chapter and Yokohama City Minato Red Cross Hospital.

After March 18, a system to dispatch additional JRCS relief teams to Fukushima was gradually put in place. From March 18, the Yamagata Chapter began to consistently send their relief team to Aizuwakamatsu. (Following the Yamagata Chapter, the Shiga and Kyoto Chapters also started to continually dispatch their relief teams to Aizuwakamatsu.) The JRCS 2nd Block also prepared a system to send relief teams to the City of Fukushima from their block from March 19.

Until the JRCS terminated its relief activities in Fukushima, their relief teams were consistently sent to Fukushima. Chart 6 shows the activities conducted by the JRCS relief teams as of 0:00 on March 21 after the dispatch system was turned around.

Chart 6: Activities by the JRCS relief teams as of 0:00 on March 21, after the dispatch system was turned around.



All of the JRCS relief teams who worked in Fukushima from March to April 2011 are as shown in Chart 7.

Chart 7: JRCS relief team dispatches to Fukushima from March to April 2011 (excl. Fukushima Red Cross Hospital relief team)

Date	Event related to the Great East Japan Earthquake	JRCS action	Dispatched to:		
			City of Fukushima (At Azuma Sports Park)	City of Fukushima (For mobile clinics)	Aizu (At secondary evacuation centers in Aizu area)
3/11	● A huge earthquake, M9.0, hit Japan. Epicenter was offshore of the Sanriku Coast. ● Units 1 to 3 at the Fukushima Daiichi Nuclear Power Plant and Units 1 to 4 at the Fukushima Daini Nuclear Power Plant automatically shut down their operation. ● The government declared “Nuclear Emergency for Fukushima Daiichi Nuclear Power Plant“ and ordered residents within a 3km radius of Fukushima Daiichi to evacuate and residents within a 10 Km radius to stay indoors.	● The JRCS Headquarter set up its Disaster Response Headquarters. ● 55 JRCS relief teams departed for the affected areas from across Japan. ● The Fukushima Chapter set up its Disaster Response Headquarters.	● Japanese RC Medical Center (3/11～12) ● Nagaoka RC Hospital (3/11～12) ● Yokohama City Minato RC Hospital (3/11～12) Note: After providing relief activities in Shinchi, the above teams left for Shiroishi, Miyagi.		
3/12	● In Unit 1 at the Fukushima Daiichi Nuclear Power Plant, an explosion, which appeared to be a hydrogen explosion, occurred. ● The government declared “Nuclear Emergency for Fukushima Daini Nuclear Power Plant“ and ordered the residents within a 3km radius of Fukushima Daini to evacuate and the residents within a 10km radius to stay indoors. The government also ordered the residents within a 20km radius of Fukushima Daiichi to evacuate.	● The Fukushima Chapter asked the JRCS Disaster Response HQ to send 12 relief teams to Fukushima. ● Due to the nuclear accident, it became unclear whether the safety of the relief team members could be secured. Therefore, the Fukushima Chapter ordered the relief teams in Shinchi to leave for Shiroishi, Miyagi and the relief teams in Minamisoma and Soma to withdraw to Kawamata.	● Nagahama RC Hospital (3/12～3/13) ● Japanese RC Okayama Hospital (3/12～13) ● Japanese RC Kochi Hospital (3/12～13) ● Takamatsu RC Hospital (3/12～13)		
3/13		● The JRCS Disaster Response HQ sent a letter to the Secretary Generals of the Block representative chapters giving directions for dispatching of relief teams. In the letter, the JRCS HQ instructed them to conduct relief activities mainly in Iwate and Miyagi for the time being, where the damage from the earthquake required a lot of need for relief activities and to provide relief activities in Fukushima according to the on-site needs. ● In the evening, a meeting for relief activities under the radiation environment was held at the Fukushima Chapter office. A decision was made at the meeting that each relief team should contact their chapter or hospital for orders, because the Fukushima Chapter Disaster Response Headquarters could not take measures to ensure the safety of each team member to conduct relief activities under the radiation environment.	● Matsuyama RC Hospital (3/13)		

Date	Event related to the Great East Japan Earthquake	JRCS action	Dispatched to:		
			City of Fukushima (At Azuma Sports Park)	City of Fukushima (For mobile clinics)	Aizu (At secondary evacuation centers in Aizu area)
3/14	● In Unit 3 at the Fukushima Daiichi Nuclear Power Plant, an explosion, which appeared to be a hydrogen explosion, occurred.				
3/15	● In Unit 2 at the Fukushima Daiichi Nuclear Power Plant, a blasting sound that appeared to be caused by a hydrogen explosion was confirmed. In Unit 4 of the power plant, an explosion, which appeared to be a hydrogen explosion, occurred and part of the building was severely damaged. ● The government ordered the residents within a 20-30km radius of Fukushima Daiichi to stay indoors.	● The JRCS Disaster Response HQ sent a letter to the Secretary Generals of the Block representative chapters. In the letter, the JRCS HQ instructed that relief activities within a 30km radius from the nuclear power plant should not be conducted at the moment according to the government's response.	● Tsuruoka Municipal Shonai Hospital (3/15～16) ● Yokohama City Minato RC Hospital (3/15～18)		
3/16					
3/17					
3/18					● Kitamurayama Municipal Hospital (3/18～20)
3/19		● The JRCS Disaster Response HQ sent a letter to the Secretary Generals of the Block representative chapters and of the 1st Block chapters. In the letter, the JRCS HQ notified that two relief teams from the 2nd Block chapter would be sent to the City of Fukushima, and one from the 1st Block chapter and one from the 4th Block chapter to Aizu, and also notified of "Relief activity criteria in Fukushima (Outline of the radiation medicine team guidance)".	● Japanese RC Musashino Hospital (3/19～22) ● Yamanashi RC Hospital (3/19～22)		
3/20					● Nagahama RC Hospital (3/20～21)
3/21					● Yamagata Prefectural Kahoku Hospital (3/21～23)

Date	Event related to the Great East Japan Earthquake	JRCS action	Dispatched to:		
			City of Fukushima (At Azuma Sports Park)	City of Fukushima (For mobile clinics)	Aizu (At secondary evacuation centers in Aizu area)
3/22		● The JRCS Disaster Response HQ sent a letter to the Secretary Generals of the Block representative chapters and of the 1st Block chapters. In the letter, the JRCS HQ instructed and notified them: (1) Whenever possible, relief teams should be accompanied by a radiological technologist; (2) Experts will be dispatched to Fukushima from the Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital and the Japanese Red Cross Nagasaki Genbaku Hospital to ensure that information and advice can be given to the relief teams on safety measures during relief activities; (3) Dosimeters, protective gears and medications will always be in place at some locations in Fukushima.	● Haga RC Hospital (3/22～25) ● Yokohama City Minato RC Hospital (3/22～25)		● Japanese RC Otsu Hospital (3/22～24) ● Japanese RC Kyoto Daini Hospital (3/22～24)
3/23					
3/24					● Nihonkai General Hospital (3/24～26) ● Japanese RC Nagahama Hospital (3/24～26)
3/25		The Executive Director General of JRCS Operations Section visited the Fukushima Chapter to support safety measures. (3/25～28)			● Maizuru RC Hospital (3/25～27)
3/26			● Yamanashi RC Hospital (3/25～27) ● Japanese RC Ashikaga Hospital (3/25～28)		● Japanese RC Otsu Hospital (3/26～28)
3/27					● Yonezawa City Hospital (3/27～29)

Date	Event related to the Great East Japan Earthquake	JRCS action	Dispatched to:		
			City of Fukushima (At Azuma Sports Park)	City of Fukushima (For mobile clinics)	Aizu (At secondary evacuation centers in Aizu area)
3/28			● Japanese RC Tsukui Hospital (3/28～30) ● Ohtawara RC Hospital (3/28～31)		● Japanese RC Nagahama Hospital (3/28～29) ● Japanese RC Kyoto Daiichi Hospital (3/28～30)
3/29					
3/30					● Yamagata City Hospital Saiseikan (3/30～4/1)
3/31			● Yokohama City Minato RC Hospital (3/31～4/2) ● Haga RC Hospital (3/31～4/3)		● Japanese RC Otsu Hospital (3/31～4/3)
4/1					
4/2					● Kitamurayama Municipal Hospital (4/2～4)
4/3			● Yamanashi RC Hospital (4/2～5)		● Japanese RC Kyoto Daini Hospital (4/3～5)
4/4			● Japanese RC Ashikaga Hospital (4/3～6)		
4/5			● Nagaoka RC Hospital (4/5～8)		● Yamagata Prefectural Kahoku Hospital (4/5～7)
4/6			● Ohtawara RC Hospital (4/6～9)		● Japanese RC Kyoto Daiichi Hospital (4/6～8)

Date	Event related to the Great East Japan Earthquake	JRCS action	Dispatched to:		
			City of Fukushima (At Azuma Sports Park)	City of Fukushima (For mobile clinics)	Aizu (At secondary evacuation centers in Aizu area)
4/7				● Japanese RC Kagoshima Hospital (4/7～10)	
4/8			● Mito RC Hospital (4/8～11)		● Yonezawa City Hospital (4/8～10)
4/9			● Haga RC Hospital (4/9～12)		
4/10				● Hachinohe RC Hospital (4/10～13)	
4/11		The JRCS Disaster Response HQ sent a survey team to Fukushima to check on the needs there. (4/11～15) (To Iwate: 3/17～31; To Miyagi: 3/17～29)	● Yamanashi RC Hospital (4/11～14)		● Yamagata Prefectural Shinjo Hospital (4/11～13)
4/12			● Japanese RC Ashikaga Hospital (4/12～15)		● Japanese RC Kyoto Daini Hospital (4/12～14)
4/13				● Hiroshima RC Hospital & Atomic-bomb Survivors Hospital (4/13～16)	
4/14			● Nagaoka RC Hospital (4/14～17)		● Kitamurayama Municipal Hospital (4/14～16)
4/15			● Ohtawara RC Hospital (4/15～16)		● Maizuru RC Hospital (4/15～17)
4/16				● Karatsu RC Hospital (4/16～19)	

Date	Event related to the Great East Japan Earthquake	JRCS action	Dispatched to:		
			City of Fukushima (At Azuma Sports Park)	City of Fukushima (For mobile clinics)	Aizu (At secondary evacuation centers in Aizu area)
4/17					● Tsuruoka Municipal Shonai Hospital (4/17～19) ● Japanese RC Otsu Hospital (4/17～21)
4/18					
4/19				● Hachinohe RC Hospital (4/19～22)	
4/20					● Yamagata Prefectural Kahoku Hospital (4/20～22)
4/21	The government “classified a 20 km radius from the Fukushima Daiichi Nuclear Power Plant as a Restricted Area and prohibited any access to that area or ordered to evacuate from that area except for emergency-related staff.”				● Japanese RC Kyoto Daiichi Hospital (4/21～23)
4/22	● The government lifted the order that the residents within a 20-30 km radius of the Fukushima Daiichi Nuclear Power Plant must stay indoors. Instead two classifications were created: the Deliberate Evacuation Area and the Evacuation-Prepared Area in Case of Emergency. “Residents in the Deliberate Evacuation Areas were instructed to evacuate according to the plan” and residents in the Evacuation-Prepared Area in Case of Emergency were instructed to prepare for evacuation from the area or to stay indoors in case of emergency. “	The JRCS Disaster Response HQ sent a letter to the Secretary Generals of the Aomori, Yamagata and Fukushima Chapters and of the 2nd and 4th Block representative chapters on safety measures to be taken for relief teams in Fukushima. In the letter, the JRCS HQ instructed that JRCS relief teams should not conduct relief activities within a 30km radius of the nuclear power plant; should ensure their safety by following the Manual for Safety Measures against Radiation and pass necessary information on to an incoming relief team at a takeover meeting; will be provided a dosimeter while conducting relief activities; sets of protective gear/equipment will be put in place at the Fukushima Chapter office and Aizuwakamatsu Blood Center.			
4/23					● Nihonkai General Hospital (4/23～25)

Date	Event related to the Great East Japan Earthquake	JRCS action	Dispatched to:		
			City of Fukushima (At Azuma Sports Park)	City of Fukushima (For mobile clinics)	Aizu (At secondary evacuation centers in Aizu area)
4/24					● Japanese RC Kyoto Daini Hospital (4/24～26)
4/25				● Oita RC Hospital (4/25～28)	
4/26					● Okitama Public General Hospital (4/26～28) ● Japanese RC Otsu Hospital (4/26～30)
4/27					
4/28		The letters that the JRCS Disaster Response HQ had sent to the Secretary Generals of the Aomori, Yamagata and Fukushima Chapters and of the 2nd and 6th Block representative chapters on the responses were re-distributed in one letter.		● Hachinohe RC Hospital (4/28～5/1)	
4/29					● Yonezawa City Hospital (4/29～5/1)
4/30					● Japanese RC Kyoto Daiichi Hospital (4/30～5/2)

Note: The dates of relief team activities in Fukushima are highlighted in yellow. Over the entire period in the chart except for March 14, relief teams from other chapters conducted relief activities in Fukushima.

2. Fukushima Daiichi Nuclear Power Plant accident and JRCS response

(1) Fukushima Daiichi Nuclear Power Plant accident

After detecting the earthquake, units 1 through 3 at Fukushima Daiichi Nuclear Power Plant and all the reactors at Fukushima Daini Nuclear Power Plant and Onagawa Nuclear Power Plant automatically shut down their operation. Subsequently the emergency diesel generators (DG) automatically started to power the cooling system for the reactors and the spent fuel pools. Damage caused by the tsunami stopped the emergency DG's operation. Resultantly, units 1 through 5 at Fukushima Daiichi Nuclear Power Plant lost AC power supply completely.

In unit 1 the Isolation Condenser (IC) ceased operation, and in units 2 and 3 the DC power supply (batteries) failed and the cooling water injection was stopped. Resultantly the core cooling for all reactors was discontinued which led the cooling water levels decreased. This exposed the reactor cores which then began to deteriorate, and finally caused meltdown. Later, in units 1 and 3, explosions which appeared to be due to hydrogen from the containment occurred near the ceilings, and the service floors of each unit building were destroyed. These explosions released a large amount of radioactive substance into the surrounding atmosphere.

On the day of the earthquake, the Japanese Government declared a "Nuclear Emergency" for Fukushima Daiichi Nuclear Power Plant. In addition, the Prime Minister ordered the residents within a 3km radius of Fukushima Daiichi to evacuate and the residents within a 10km radius to stay indoors. On the following day, March 12, the Japanese Government declared a "Nuclear Emergency" for Fukushima Daini Nuclear Power Plant. In addition the Prime Minister ordered the residents within a 3km radius of Fukushima Daini and a 20km radius of Fukushima Daiichi to evacuate. Residents within a 10km radius of Fukushima Daini were ordered to stay indoors. On March 15, the Prime Minister ordered residents within a 20-30km radius of Fukushima Daiichi to stay indoors.

(2) JRCS relief teams shortly after the nuclear accident

Soon after the earthquake, the JRCS relief teams began their relief activities in Fukushima including the Pacific coastal area such as Minamisoma. However, it became difficult to ensure the safety of the relief team members after the nuclear accident was reported by media, because the relief teams had no equipment to protect against radiation.

Then the Fukushima Chapter staff, the relief team physicians, chief nurses and clerks gathered at the Fukushima Chapter office and held a meeting for relief activities in the radioactive environment. At the meeting, the Fukushima Chapter Disaster Response Headquarters concluded that the Fukushima Chapter was not able to secure the safety of the relief team members in their activities in the radioactive environment and the relief teams should ask their JRCS chapters or hospitals for orders on what they should do.

The JRCS relief teams were not equipped with any gear or device to protect themselves from radiation in relief activities, and the JRCS also had no principle for safety measures to conduct relief activities in a radioactive environment. This forced the Fukushima Chapter to temporarily discontinue accepting relief teams from other chapters.

(3) JRCS response to the nuclear accident

March 15: It was decided not to provide relief activities within a 30km radius of the nuclear power plant.

On March 15, the JRCS Disaster Response Headquarters made a decision "not to provide relief activities within a 30km radius of the nuclear power plant by following the government's response at the moment." The HQ sent a letter on the decision to the Secretary Generals of the Block representative chapters.

March 19: Safety measures for relief activities in Fukushima were ensured.

On March 19, the JRCS Disaster Response HQ sent a letter to the Secretary Generals of the Block representative chapters and of the 1st Block chapters that the guidance from the Fukushima Prefecture Radiation Emergency Medicine Coordination Headquarters should be followed to secure safety measures for JRCS relief team members as they conduct medical relief activities in Fukushima. On the same day, the coordination headquarters began to provide information to the JRCS. This allowed the JRCS relief team members to receive information about safety measure that they should take during medical relief activities in Fukushima and also advice from the specialists at the coordination headquarters.

March 22: Dispatch locations of relief teams from the JRCS Blocks were decided. Also, radiation emergency medical advisors began to stay at the Fukushima Chapter Disaster Response Headquarters.

It was decided that the dispatch locations of relief teams would be assigned to the JRCS Blocks from March 22 to allow the JRCS to continually provide relief activities in the affected areas. The specific locations were as follows:

- Iwate: 1st, 2nd and 4th Blocks
- Miyagi: 3rd, 5th and 6th Blocks
- Fukushima: No Blocks assigned. Relief teams to be sent to Fukushima from all Blocks.

In addition, the radiation emergency medical advisors began to stay at the Fukushima Chapter Disaster Response Headquarters on March 22. From March 25, the equipment against radiation (dosimeters, protective gear, medications and related items) started to be always on-hand at the Fukushima Chapter office. It was decided that the JRCS relief teams from other chapters should first come to the Fukushima Chapter office to receive the guidance shown in Chart 8 from the radiation emergency medicine advisors about basic radiation knowledge and how to use the equipment before starting relief activities in Fukushima. For relief teams to work in Aizuwakamatsu, such knowledge and information were passed on between outgoing and incoming teams in a takeover meeting, because Aizuwakamatsu is far from the City of Fukushima.

Chart 8: Outline of the guidance from the Radiation Medicine Team of the Fukushima Prefecture Radiation Emergency Medicine Coordination Headquarters

What should be done by whom:	・ Response to radiation exposure and contaminated patients (radiological workers): Teams of radiation emergency hospitals ・ Response to residents: Screening teams/Relief teams ・ Transportation of patients: DMAT
Safety management:	・ Zoning: No relief activities within a 30km radius of the nuclear power plant ・ Protection from radiation: ・Air dosimeter: At 20μSV/h and above contact the headquarters for direction (Evacuate if it reaches 100μSV/h) ・Carry a personal dosimeter: Evacuate if it reaches 1mSv ・ Measures against internal exposure ・Wear a protective gear ・Let relief team members of 40 years and under carry iodine tablets ・Carry N95 breathing protection apparatus
Registration and communication:	・ Relief team members should register their names, etc. using a designated registration form ・ Meeting: at 8:00 and 20:00 ・ Relief teams should leave activity sites each day to be back in time for a meeting at 20:00, in principle ・ Relief team members should register a contact person of their chapters/hospitals. Relief team members should send a blank e-mail message back to an e-mail sent from the coordination headquarters
Activity:	・ Screening ・ Write an activity report using the designated form

April 22: JRCS principles for relief activities in Fukushima were presented.

On April 22, the JRCS Disaster Response HQ presented the principles for relief activities in Fukushima in a letter, which include the guidance from Fukushima Prefecture described in the above. (JRCS Disaster Response HQ Letter No. 28) as shown in Chart 9.

Chart 9: Safety measures for relief teams in Fukushima

Safety measures:	・ Relief activities should not be conducted within a 30km radius of the nuclear power plant (On June 6, the areas was changed to a 20km radius.) ・ Relief teams should follow the JRCS Manual for Safety Measures against Radiation to ensure safety and should have a takeover meeting between outgoing/incoming teams ・ The Fukushima Chapter and the Department of Radiation of the Fukushima Red Cross Hospital should response to emergencies and advice provision.
Dosimeters:	・ Personal dosimeters should be provided to relief teams during relief activities. (The JRCS prepared 100 personal dosimeters in total.) ・ The dosimeters should be set to go off at a cumulative dose of 1mSv. Relief team members should evacuate if it reaches 1mSv

Protective gear/equipment:	・ In case of emergency sets of protective gears (protective suit, goggle, N95 mask and gloves) should be always in place at the Fukushima Chapter office and the Japanese Red Cross Aizuwakamatsu Blood Center ・ Geiger counters should be equipped at the Fukushima Chapter office ・ Iodine tablets should be always in place at the Fukushima Red Cross Hospital
Recording of exposure doses:	Radiation doses exposed during relief activities should be recorded to decide on the safety of the relief team members from the values at the end of their activities. The records should be maintained at the JRCS HQ

(4) Gradual scale-down of relief teams after April 2011

On April 8, the letter “Principles for continuing to dispatch JRCS relief teams in response to the Great East Japan Earthquake” (JRCS Disaster Response HQ Letter No. 10) was sent within the JRCS. The letter stated that JRCS relief team activities including mobile clinics and psychological care would continue to be required towards the rehabilitation period and the current system for the activities would be maintained by the end of May 2011.

After that, the JRCS letter dated May 13 showed a direction to scale down relief activities in Fukushima (“Principles for continuing to dispatch JRCS relief teams in response to the Great East Japan Earthquake”, JRCS Disaster Response HQ Letter No. 49). The letter dated June 14 “Principles for dispatching JRCS relief teams from July 2011 in response to the Great East Japan Earthquake” (JRCS Disaster Response HQ Letter No. 72) stated that relief activities in Fukushima would be discontinued, because the needs for medical relief activities were reducing.

However, relief activities during the evacuees’ temporary re-entry to the restricted area were continued even from July.

The relief activities were carried out in Fukushima as shown in Chart 10.

Chart 10: Relief activities in Fukushima

	Activity area	N. of relief teams	Plan from the next month	
April	City of Fukushima, Aizuwakamatsu	4 (as of April5)	To continue the current activities	Mobile clinic activities to continue
May	City of Fukushima	1 (as of May 12)	To scale down	To discontinue dispatches at the end of May
	Aizuwakamatsu	1 (as of May 12)		To continue dispatching one relief team.
June	City of Fukushima	—	To discontinue dispatching relief teams	Mobile clinic activities are conducted by the Fukushima Chapter relief teams, but to be discontinued at the end of June

June	Aizuwakamatsu	1 (As of June 6)	To discontinue dispatching relief teams	Relief activities are provided by Relief Team of the 2nd Block, but to be discontinued at the end of June.
July -	Relief activities during the evacuees' temporary re-entry in the restricted area to continue			

(5) Dispatch of radiation advisors

As mentioned above, radiation emergency medicine advisors began to be dispatched to the Fukushima Chapter Disaster Response HQ from the Japanese Red Cross Nagasaki Genbaku Hospital and the Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital to stay in Fukushima and give information and advices on safety measures against radiation. That system was put in place. The dispatched radiation emergency medicine advisors were shown in Chart 11.

Chart 11: The dispatched radiation emergency medical advisors

Period:	Name:	Hospital:
March 22～24	Horio (Physician)	Japanese RC Nagasaki Genbaku Hospital
March 25～29	Joh (Physician) Tanaka (Radiological technologist)	Japanese RC Nagasaki Genbaku Hospital Hiroshima RC Hospital & Atomic-bomb Survivors Hospital
March28～April 2	Tomonaga (Director General) Nozaki (Radiological technologist)	Japanese RC Nagasaki Genbaku Hospital Hiroshima RC Hospital & Atomic-bomb Survivors Hospital
April 2～6	Tsukasaki (Associate Professor) Yasunari (Radiological technologist)	Nagasaki University Hiroshima RC Hospital & Atomic-bomb Survivors Hospital
April 5～8	Arita (Physician) Yamane (Radiological technologist)	Hiroshima RC Hospital & Atomic-bomb Survivors Hospital
April 9～12	Nishi (Deputy Director General) Takahashi (Radiological technologist)	
April 13～16	Tsutsui (Physician) Sumida (Radiological technologist)	

April 17～20	Yamamoto (Physician) Kanda (Radiological technologist)	Hiroshima RC Hospital & Atomic-bomb Survivors Hospital
April 21～24	Arima (Physician) Aiga (Radiological technologist)	
April 25～28	Okita (Director General) Sakoda (Radiological technologist)	Japanese RC Hiroshima Blood Center Hiroshima RC Hospital & Atomic-bomb Survivors Hospital

3. Activities by the Fukushima Chapter Disaster Response Headquarters

(1) Activities by the Fukushima Chapter Disaster Response Headquarters shortly after the earthquake

At 14:50, shortly after the earthquake occurred, the Fukushima Chapter set up its Disaster Response Headquarters. Although the land-line and mobile phones became unavailable, there was no damage to the chapter building. The Fukushima Chapter began to collect information and distribute relief supplies.

Due to the overwhelming amount of information received from numerous sources at the Fukushima Prefecture Disaster Response Headquarters, the reports were confusing and difficult to accurately interpret. Furthermore, it was difficult to receive information from the Fukushima Chapter staff dispatched to the Fukushima Prefecture Headquarters. Therefore, the chapter gathered information from TV and other media. When the telephone became available, the chapter collaborated over the phone with the local governments to determine the needs of the eastern area of Fukushima (Hamadori) where the damage from the tsunami expected.

At 4:45 on March 12, the Fukushima Chapter requested the JRCS HQ for 12 relief teams (including one team from the Fukushima Chapter). At the time, many relief teams from other JRCS chapters were already on their way to the affected areas. Therefore, the JRCS HQ made the dispatch request to those JRCS chapters retrospectively. When the relief teams came to Fukushima, the Fukushima Chapter ordered their destinations (e.g. Shinchi) through wireless communication.

The JRCS later received information on a critical accident which occurred at the Fukushima Daiichi Nuclear Power Plant. It was unclear if the chapter would be able to ensure the safety of the relief team members who were engaging in relief activities in the affected area. Thus, the Fukushima Chapter ordered the relief teams to withdraw and move to other areas. The relief teams in Shinchi relocated to Shiroishi, Miyagi and teams in Minamisoma and Soma relocated to Kawamata.

The Fukushima Chapter was questioned by multiple relief teams regarding the proper response in providing medical relief during a radiation emergency. Additionally, the relief team members were concerned about their own possible exposure to radiation and the danger in continuing the on-site relief activities. As a result, the possibility of continuing relief activities while wearing protective gear was discussed. However, an agreement between the JRCS HQ and the Fukushima Prefectural Government was not made on this issue. Therefore, the chapter cancelled the request for relief activities in Fukushima at 19:30 on March 13 and the dispatches of JRCS relief teams from other chapters were temporarily discontinued. With the exception of the Yamagata Chapter relief team working on March 15-16, the JRCS relief team was the only the Fukushima Chapter relief team.

(2) Acceptance of support administrative staff from other JRCS chapters

On the day of the earthquake, administrative staff from the Niigata Chapter came to the Fukushima Chapter for support. This was followed by other chapters and blood centers from across Japan on a continuous basis. The JRCS relief teams in Fukushima were based in two cities: City of Fukushima and Aizuwakamatsu. The Fukushima Chapter staff was sent to Aizuwakamatsu as a relief activity coordinator. And support staff from the other chapters was also assigned to the role. The support staff sent from other chapters is shown in Chart 12.

Chart 12: Number of support staff from other JRCS chapters by dispatch location and period

(N=person)

Dispatch period / Dispatch location	March	April	May	June	July	August	Total:
Fukushima Chapter	29	50	17	-	-	-	96
Fukushima Prefecture Health & Welfare Office in Aizuwakamatsu	-	4	1	8	-	-	13
Aizuwakamatsu	-	2	2	-	-	-	4
Total:	29	56	20	8	0	0	113

Note: The dispatch period is classified according to the starting day of the dispatch.

(3) Collaboration and communication with related organizations including local governments

The dispatch period of DMATs in Fukushima was extended to March 21. After March 22, many other medical teams from a variety of organizations (Japanese Medical Association Teams, JRCS relief teams and teams requested by the Fukushima Prefectural Government) continued medical relief in Fukushima. In addition, there were other groups including the local medical association groups that the prefectural government was not aware of. Having those numerous teams and groups without a central command issuing orders led to much confusion.

The Fukushima Prefectural Government set up “Fukushima Prefecture Disaster Medical Care Support Network” organized by the prefectural government, Fukushima Medical University, and Fukushima Prefecture Medical Association. Information was collected regarding the evacuation centers and the affected area and shared with the related organizations. Medical human resources were registered and accepted to Fukushima. Their dispatch locations were also coordinated by utilizing the network information. Furthermore, the network organized “Fukushima Medical General Coordination Meeting in Response to the Great East Japan Earthquake” to share information among the prefectural government, Fukushima Medical Association, Fukushima Medical University, Fukushima Prefecture Dental Association, Fukushima Hospital Association, Fukushima Nursing Association, Fukushima Pharmacist Association and other related groups. In addition, the prefectural government asked medical teams to voluntarily submit a “Registration Sheet for Medical Support”.

The Fukushima Prefectural Government divided the prefecture into 7 living zones. The balance between demand and supply for medical teams was adjusted by area. The JRCS relief teams took on medical relief activities for the northern Fukushima and Aizu area. The prefectural government (the Fukushima Prefecture Disaster Response Headquarters) gathered information through Health and Welfare Offices in all areas of Fukushima and asked local governments or hospitals to send medical teams based on requests by the Health and Welfare Offices.

The JRCS Fukushima Chapter dispatched their staff to the Fukushima Prefecture Disaster Response Headquarters soon after the earthquake and collaborated with the Fukushima Radiation Emergency Medicine Coordination Headquarters/Fukushima DMAT Coordination Headquarters and Fukushima Prefecture Disaster Medical Care Support Network. For the relief activities in the northern Fukushima and

Aizu area, the Fukushima Chapter staff attended a meeting for medical team coordination held at the Northern Fukushima Health and Welfare Office. The chapter also dispatched their staff to help operations of the Aizu Area Disaster Medical Care Coordination Headquarters set up at the Aizu Health and Welfare Office. In this way, the Fukushima Chapter worked in cooperation with the Health and Welfare Offices in Fukushima.

4. Relief activities during the temporary re-entry program

(1) Background of the JRCS involvement in the relief activities

1) Outline of the temporary re-entry program

In May 2011, the Local Nuclear Emergency Response Headquarters set up by the government in Fukushima started a program to support the evacuees who had lived within the restricted area (an off-limits area which is within a 20km radius of the Fukushima Daiichi Nuclear Power Plant) to temporarily return to their homes.

The program set up several entry points at places within a 20 – 30km radius of the power plant (i.e. the deliberate evacuation area and emergency-prepared area in case of emergency designated by the government). The evacuees were transported by bus between the entry points and the restricted area. There were four entry points: Bajikoen in Minamisoma, Kodo Gymnasium in Tamura, Kawauchi Sports Center and Hirono Central Gymnasium.

The medical group of the Local Nuclear Emergency Response Headquarters conducted medical interviews with the evacuees before going into the restricted area and also explained what they needed to have in mind in terms of health condition for the re-entry. After they returned to the entry points from the restricted area, the medical group conducted contamination screening and checked the evacuees' cumulative radiation doses during the re-entry. In addition, if the evacuees got sick, the medical group provided treatment at the entry points.

2) Background of the JRCS involvement in the relief activities

The medical group of the Local Nuclear Emergency Response Headquarters requested the JRCS to provide relief activities at the entry points during the evacuees' temporary re-entry to the restricted area (temporary home return). Following the request, the JRCS Fukushima Chapter dispatched their Relief Team 1 to Kodo Gymnasium in Tamura, one of the entry points on May 22.

In the meantime, on May 24, the Ministry of Health, Labour and Welfare (MHLW) contacted the JRCS Disaster Response HQ by phone to ask for more JRCS relief teams to be dispatched to Fukushima. The MHLW explained to the JRCS that the Japanese DMATs, the National Disaster Medical Center and the Fukushima Red Cross Hospital relief team had already provided relief activities during the temporary re-entry, but three local governments began the temporary home return program at the same time and that increased the need for medical relief, and also responding to the elderly people. Within this setting, the MHLW requested the JRCS HQ to dispatch more relief teams to Fukushima. The JRCS Disaster Response HQ discussed the request with the JRCS Medical Services Department and decided to accept it by sending JRCS relief teams from the Fukushima Chapter.

On May 22, and from May 25 – 27, the Fukushima Chapter dispatched their relief teams to assist the temporary re-entry program. On June 1, the Fukushima Chapter asked the JRCS Disaster Response HQ to arrange dispatching relief teams from other JRCS Blocks, because the chapter expected that it would become difficult to continuously dispatch relief teams only from the Fukushima Chapter in supporting medical relief for the temporary re-entry. Following the request, the JRCS Disaster Response HQ decided to make arrangements for dispatching JRCS relief teams for the relief activities during the temporary

re-entry.

3) Outline of the JRCS relief activities

The entry point that the JRCS was responsible for was Bajikoen in Minamisoma. A team consisted of four members (1 physician, 2 nurses and 1 administrator). (Whenever a relief team was dispatched by vehicle from a JRCS chapter, two administrators were dispatched.) From February 2012, the team basically did not include a physician but consisted of only three members (2 nurses and 1 administrator), because a local emergency patient transportation system was already in place by that time. The activity itinerary of the team was: Arriving at the Fukushima Chapter office by 16:00 on the previous day to receive instructions for relief activities -> Traveling to accommodation facilities (in the City of Fukushima) -> Relief activities for two or three days -> Returning to the Fukushima Chapter office -> Being sent off at the Fukushima Station in a Fukushima Chapter car to return to their hospital/chapter.

(2) JRCS relief activities during the temporary re-entry program

The JRCS relief teams were dispatched for relief activities during the temporary re-entry in Round 1 (May – August 2011), Round 2 (September – December 2011) and Round 3 (February – March 2012).

During these periods of time, the implementation of the temporary re-entry program was decided one by one, by respecting the evacuees' intention. As a result, the number of requested days for relief activities was increased. Since the medical group of the Local Nuclear Emergency Response Headquarters did not request the dispatching of relief teams on a planned basis, the JRCS HQ had difficulty in arranging relief teams from the JRCS Blocks.

In the beginning, the JRCS responded to the request for medical relief by sending relief teams from the Fukushima Chapter, but the JRCS was beginning to receive more requests for dispatching relief teams and made arrangements to dispatch other relief teams from the 1st Block. However, it became difficult for the block to continue to dispatch JRCS relief teams. Therefore, the JRCS Disaster Response HQ asked the 2nd Block to send relief teams to Fukushima from July of Round 1. The 2nd Block dispatched their relief teams. During Round 2, the 1st Block supported the relief activities. The relief teams were sent mainly from the Fukushima Chapter. For Round 3, the 2nd Block took on the task again. However, as for requests made for additional relief teams from March 10 in the same round for re-entries arranged on short notice, the Miyagi and Fukushima Chapters (1st Block) responded to the requests and dispatched their relief teams.

The relief activities for the temporary re-entry program conducted by the JRCS Chapters are as shown in Chart 13.

Chart 13: Relief activities during the temporary re-entry

		May 10 – December 31, 2011 (Round 1 and 2)		February 11 – March 31, 2012 (Round 3)	
	Chapter	N. of relief teams dispatched	N. of activity days	N. of relief teams dispatched	N. of activity days
1st Block	Hokkaido	2	3		
	Aomori	5	10		
	Iwate	1	2		
	Miyagi	3	6	3	5
	Akita	3	5		
	Yamagata	3	6		
	Fukushima	38	38	4	4
	Sub-total:	55	70	7	9
2nd Block	Ibaraki	2	4	1	2
	Tochigi	3	4	1	3
	Gunma	1	2	1	2
	Saitama	2	4	1	2
	Chiba	2	5	1	2
	Tokyo	2	5	1	3
	Kanagawa	2	4	1	2
	Niigata	1	2	1	3
	Yamanashi	2	4		
	Sub-total:	17	34	8	19
Grand total:		72	104	15	28

Chapter III: The Relief Personnel's Views on the Relief Activities

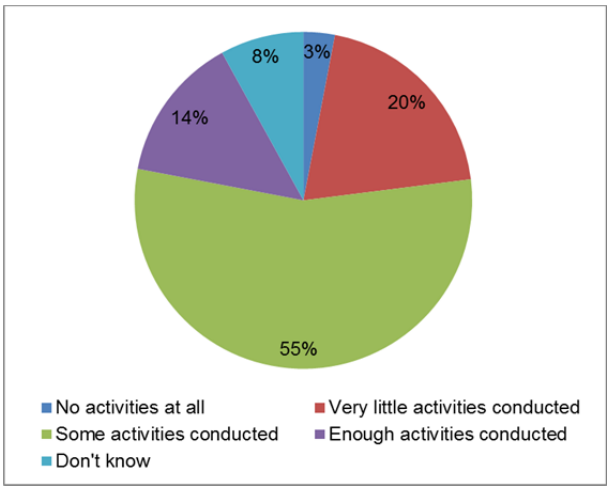
1. Evaluation and views on the overall relief activities

The interview and questionnaire surveys were conducted on the JRCS relief personnel involved in the relief activities in Fukushima and the JRCS staff of the chapters and hospitals which dispatched the relief teams. The survey results show that the JRCS provided relief activities as much as possible and did their best during the nuclear disaster which followed the accident at the Fukushima Daiichi Nuclear Power Plant. From the questionnaire survey results, about 70% of the respondents think that they were able to conduct relief activities to a certain extent. (Chart 14)

Chart 14: Evaluation of the relief activities in Fukushima

Question: "Looking back on the JRCS relief activities in the nuclear disaster in Fukushima, how do you see it?"

Answers (n = 137)



However, many of the relief personnel who worked in Fukushima from soon after the earthquake and nuclear accident to the time the meeting held on March 13 responded that they don't know if they were able to conduct enough activities (Chart 15). The result indicated that some of the relief personnel have a question of whether the JRCS provided enough activities in Fukushima at the time. About 80% of the respondents replied that there were issues in the relief activities. Particularly, the ratio is higher with the first responders.

The interview survey was conducted mainly on the first responders. The results show that they are highly conscious of the issues and challenges for the future. They regret the insufficient relief activities in Fukushima as shown in the questionnaire survey.

Overall, the respondents think that the JRCS provided enough relief activities in Fukushima. On the other hand, they feel there are issues and challenges. They strongly think that there is a room to improve JRCS relief activities. In the next section, the issues and challenges, particularly during the first response period, are summarized based on the results of the surveys.

Chart 15: Evaluation of the relief activities in Fukushima (Answers from the first responders)

Question: “Looking back on the JRCS relief activities during the nuclear disaster in Fukushima, how do you see it?” Among the respondents, answers came from the relief personnel (n=16) who worked “from soon after the earthquake on March 11 to the nuclear accident occurrence on March 12” and “from the nuclear accident occurrence on March 12 to the meeting held on March 13 for the relief activities under the radiation environment”.

Answers (n = 16)

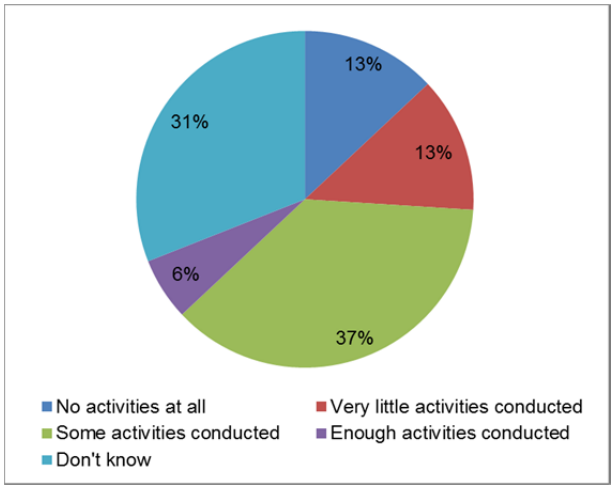


Chart 16: Views on issues in the relief activities in Fukushima

Question: “Did you feel any issues with the JRCS relief activities while you were engaging in them in Fukushima shortly after the nuclear accident?”

Answers (n=137)

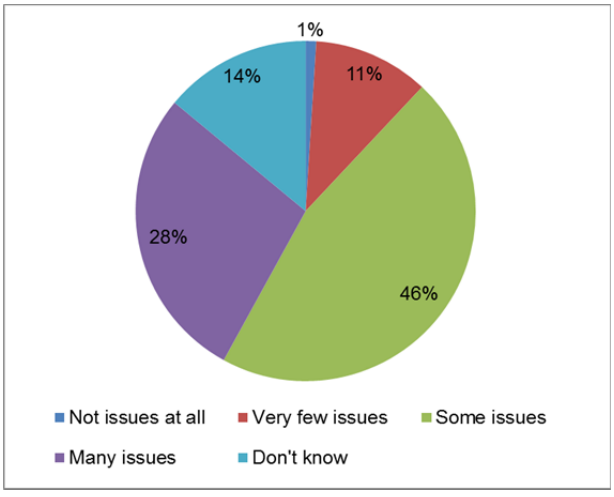
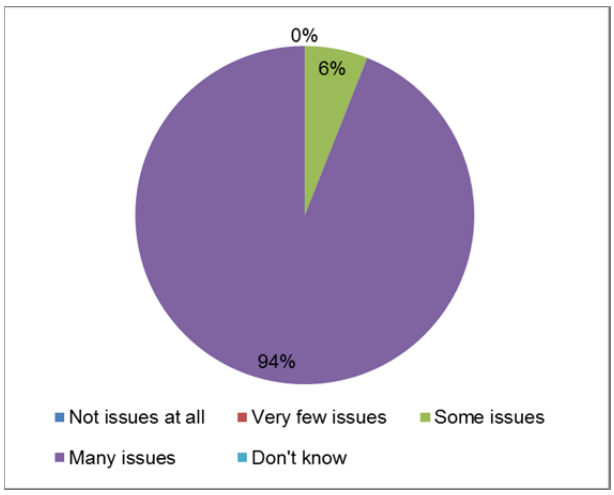


Chart 17: Views on issues in the relief activities in Fukushima (Answers from the first responders)

Question: “Did you feel any issues with the JRCS relief activities while you were engaging in them in Fukushima shortly after the nuclear accident?”

Among the respondents, answers came from the relief personnel (n=16) who worked “from soon after the earthquake on March 11 to the nuclear accident occurrence on March 12” and “from the nuclear accident occurrence on March 12 to the meeting held on March 13 for the relief activities under the radiation environment”.

Answers (n=16)



2. Views of regret on the relief activities

The most significant issue during the relief activities conducted after the nuclear disaster which followed the Great East Japan Earthquake, was that there was a period when not enough relief activities were being conducted in Fukushima. Especially immediately after the nuclear accident, the relief teams faced things beyond expectations one after another. There was confusion both on the relief activity sites and in the command structure. Under such circumstances, relief activities are supposed to be performed by on-site judgments and decisions under commands from the JRCS HQ, the Block representative chapters or each chapter, but that was not the case in the disaster. Enough relief activities were not provided. The JRCS is not necessarily responsible for the circumstances. However, there were some victims under the circumstances and the JRCS was not able to prevent that from occurring; in terms of results.

The two events concurrently occurred: the unprecedented disaster in a wide area and the unexpected nuclear accident. These caused more complicated issues and problems than those in other affected prefectures. This section put together the relief personnel’s views on the issues occurred in Fukushima and the JRCS structural problems which led to the issues based on the results of the interview and questionnaire surveys.

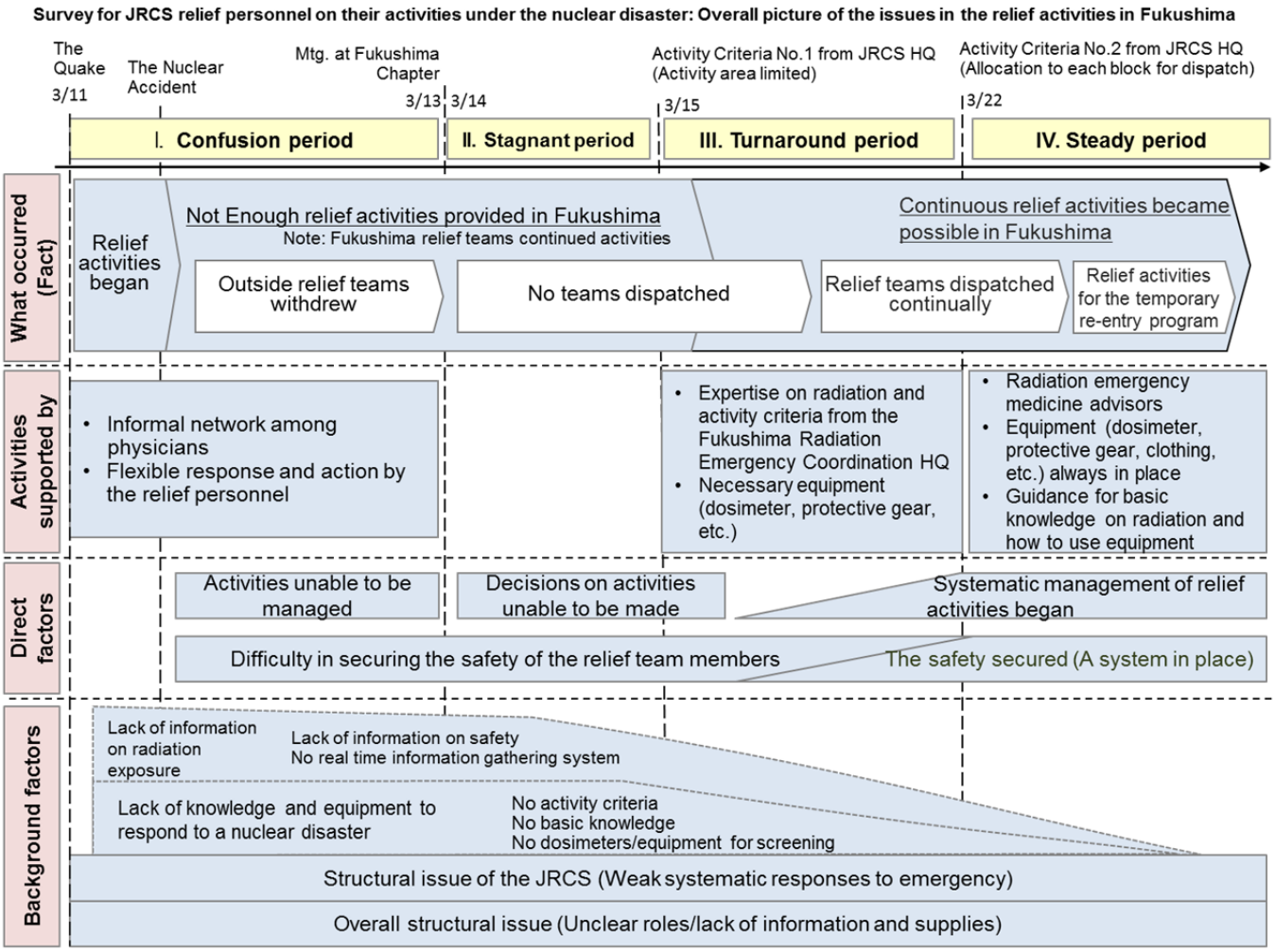
For convenience, the periods of the relief activities in Fukushima are classified into four periods. The classifications, periods and events are as shown in Chart 18.

Chart 18: Classified periods for the relief activities in Fukushima

I. Confusion/Stagnant period	I - 1: Confusion period	March 11 – 13, 2011	・ The Great East Japan Earthquake occurred ・ The Fukushima Daiichi Nuclear Power Plant accident occurred
	I - 2: Stagnant period	March 14	・ Following the conclusion made at the meeting for relief activities in the radiation environment (held at the Fukushima Chapter office), the Fukushima Chapter cancelled the request for dispatching JRCS relief teams
II. Confusion/Stagnant period	II – 1: Turnaround period	March 15 - 21	・ The JRCS Disaster Response HQ instructed in a letter dated March 15 that JRCS relief teams should not conduct relief activities within a 30km radius of the nuclear power plant
	II – 2: Steady period	March 22 -	・ The JRCS Disaster Response HQ notified within the JRCS in a letter dated March 22 that relief teams to be dispatched to Fukushima should not be assigned to specific JRCS Blocks but all Blocks can send their teams to Fukushima ・ Radiation emergency medical advisors began to stay in Fukushima

According to the above classifications, the issues by each period are summarized in Chart 19 on the next page. In this chapter, the issues that arose during the relief activities and the relief personnel's views on those issues are put together.

Chart 19: Overall picture of the relief activities in Fukushima by each period



I. Confusion/Stagnant period

I - 1. Confusion period

(1) Relief activities

Soon after the earthquake occurred on March 11, 2011, JRCS relief teams from across Japan started relief activities in Fukushima as well as in Iwate and Miyagi. However, the explosion occurred at the Fukushima Daiichi Nuclear Power Plant on March 12 and it forced the relief teams to deal with a nuclear disaster beyond the expectations of the JRCS.

In other disasters, JRCS relief team members with a lot of relief experience would quickly respond to a situation in an affected area, and the teams would start relief activities while gathering information. However, the nuclear accident occurred when the relief activities were about to begin. The relief teams were not receiving any accurate information, and this caused fear and confusion. As a result, the teams were not able to provide enough relief activities. The specific situation is described as below.

1) Enough relief activities were not able to be provided to the evacuees (who could have been exposed to radiation)

The most significant problem which the relief teams faced soon after the nuclear disaster was that **they were not able to provide enough relief activities for the evacuees (who could have been exposed to radiation).** To be more specific; when the relief team members were about to provide medical relief to the evacuees from an area designated as an evacuation zone, the team members feared the possibility of secondary radiation exposure and could not give enough medical examination and treatment to the evacuees. In another similar case; when patients were transported from the evacuation zone to the City of Fukushima, a situation to accept those patients was not established for a while because of the on-site confusion in terms of logistics and also the relief team members' concern about the possibility of patients' radiation exposure. These led to insufficient relief activities.

The possible secondary radiation exposure from the evacuees disturbed the relief team members. Under the circumstances, it was quite difficult to decide on who should make a decision as to which extent the teams should conduct relief activities. As a result, the evacuees incurred the ripple effect of the confusions.

<Comment by a relief team member from other chapter>

- At the Fukushima Gender Equality Center in Nihonmatsu, we did not know at all how far the evacuees were living from the nuclear power plant when the nuclear accident occurred, how much they could have been exposed to radiation, or whether coming into contact with them could be dangerous or not. So, there was no way to conduct our relief activities. We left Nihonmatsu but did not think of what would happen to the area later on.

<Comment by the Fukushima Chapter staff>

- On the night of March 15, 30 patients from Futaba Hospital in Okuma were moved in Fukushima by bus and were eventually transported to the Fukushima Prefectural Office. The disaster

response headquarters of Fukushima Prefecture asked us if the JRCS could respond to those patients. Fukushima Red Cross Hospital and a relief team from the Yamagata Chapter discussed it and made a decision to accept the patients. Also on March 16, we received a similar request, which we discussed with a physician of the Fukushima DMAT coordination headquarters and prefectural officials. It was decided to accept the patients by setting up a JRCS first aid center at the evacuation center in Azuma Sports Park. We did not know the background of the patients' transportations. Later, it was discovered there were some elderly people who had died while being moved around trying to find an appropriate evacuation center that would accept them.

2) The relief teams from other chapters were forced to withdraw.

Soon after the nuclear accident, the relief teams were not able to provide enough relief activities. That was not the only problem. Another problem was that **the JRCS relief teams who came to Fukushima to provide support were forced to withdraw from relief activities.**

When the nuclear accident occurred on March 12, the JRCS relief teams working in Fukushima were: three DMATs (Disaster Medical Assistance Teams) who came to Fukushima on March 11 from Japanese Red Cross Medical Center (JRCS HQ), Yokohama City Minato Red Cross Hospital (Kanagawa Chapter) and Nagaoka Red Cross Hospital (Niigata Chapter), and the relief teams who arrived at Fukushima on March 12 from Japanese Red Cross Nagahama Hospital (Shiga Chapter), Japanese Red Cross Okayama Hospital (Okayama Chapter), Takamatsu Red Cross Hospital (Kagawa Chapter) and Japanese Red Cross Kochi Hospital (Kochi Chapter).

The three DMATs assessed the medical needs in the affected area and then decided to switch to JRCS relief teams. When they were about to start relief activities on a full scale, they were forced to withdraw from Fukushima. The relief teams who arrived at Fukushima on March 12 were informed of the nuclear accident on the way to Fukushima. They had to withdraw without providing enough relief activities.

Under the circumstances without any correct information on radioactivity, the JRCS relief teams were agonizing between protecting themselves and giving up their relief activities and leaving the evacuees behind. They were forced to make an agonizing decision.

<Comments of the relief teams from other chapters>

- The town municipal officials told us about a possibility of an explosion at the nuclear power plant and quickly we communicated with the Niigata Chapter. At the time, the information seemed to be unreliable, but the Niigata Chapter contacted us over satellite phone and said that there was possibly an explosion. Then our withdrawal was decided. I tried to reach our team members who were out collecting information, but I couldn't. About one hour later, the members started returning to the town hall one after another. We greeted the town people before moving to Shiroishi. When I conveyed to the mayor about our decision to withdraw, he said nothing. But I cannot forget how he looked.
- I understand that we withdrew from Shinchi to ensure our safety, because the relief activities

were being conducted without any protective gear/equipment. However, in hindsight, I am not sure whether it was appropriate for us to have left hundreds or thousands of people behind and have not informed them of the explosion at the nuclear power plant. If we needed to evacuate the evacuees from the town, we had to take it on as our mission. All of our relief team members still regret that we withdrew by telling a lie to the evacuees.

- When we were back at the disaster response headquarters of the town hall in Shinchi, we were told about the withdrawal. I felt sorry for leaving there, because we told the affected people at the evacuation centers we visited that we would be returning again the next day. We could leave the town with the information about the explosion, but I was wondering why the residents were not being informed of anything about it.
- The Fukushima Chapter decided that the JRCS relief teams dispatched from other prefectures should return to their hospitals and only the Fukushima Red Cross Hospital relief team should provide relief activities in Fukushima for the time being. Nobody knew the specific air radiation doses. We were ordered not to wear protective gear. Therefore, the Fukushima Chapter decided to get the JRCS relief teams from other prefectures to leave Fukushima. However, the Fukushima Chapter stressed that there was an obvious need for relief activities and it seemed to me that the chapter made the decision with deep regret.

On the other hand, as mentioned in one of the above comments, the Fukushima Chapter did not have enough information to make a decision on whether the JRCS relief teams should stay in Fukushima or withdraw, even though the teams asked the chapter for orders. For the Fukushima Chapter to ask the relief teams to continue relief activities in Fukushima, their relief activity locations needed to be safe. That was the major premise. However, neither the Japanese government nor the Fukushima prefectural government published any precise information shortly after the nuclear accident. Furthermore, the Fukushima Chapter had no means or knowhow to measure radiation doses in those places. **There were no means to verify the safety.** Also, **there were no rules or guidelines defining what criteria to use when deciding on the discontinuation of relief activities when conditions were not safe. One way or the other, the Fukushima Chapter was in a difficult situation to make a decision.** It was desirable that the JRCS HQ should give some directions in this situation, but they did not have any processes for making decision either, and was not able to give any effective decisions to the relief teams.

On the evening of March 13, a meeting for relief activities in the radiation environment was held at the Fukushima Chapter office. The decision was made that the Fukushima Chapter would cancel requests for relief activities in Fukushima by the relief teams from other chapters, and that those relief teams should follow orders from their chapters or hospitals. As a result, the relief teams dispatched from other prefectures withdrew from relief activities in Fukushima. On March 14, only the Fukushima Chapter team provided relief activities in Fukushima. The staff and relief team members of the Fukushima Chapter were disappointed at failing to prevent the relief teams from other chapters in Fukushima from leaving because of the difficulty in guaranteeing their safety. They feared they were being forced to work as relief members while feeling scared about the possibility of radiation exposure. At the same time, the Fukushima Chapter

staff and relief team members were angry at the JRCS HQ, because the HQ forced the chapter in the affected area to make a grave decision about whether the relief teams should stay or withdraw. They spoke about those feelings in interviews indicated below.

<Comments of the staff and relief team members of the Fukushima Chapter>

- On the evening of March 13, the leaders of the JRCS relief teams deployed in Fukushima gathered at the Fukushima Chapter office and discussed how the teams should conduct relief activities in the radiation environment. The conclusion at the meeting was that we should ask the National Headquarters of the JRCS for further directions on we should act. We intended to act according to the orders from the National Headquarters. However, they did not reach any conclusion on what kind of orders they should give to the relief teams and told us they would continue to discuss the matter. On the other hand, the relief team members in the affected area were also discussing how they should act from the next day. Without any orders received from the National Headquarters, we were forced to make a decision as the JRCS chapter in the affected area.
- The relief teams said, “The main premise is to conduct relief activities in safe places. “ But we could not answer to that, because there was no information on the situation. It was an agonizing decision for us to abandon relief activities under the Fukushima Chapter’s command. The relief teams dispatched from other prefectures contacted their chapters for orders and left Fukushima from the night of March 12 to the morning of March 13.
- After the explosion at the nuclear power plant, the JRCS relief teams moved to Shiroishi or Kawamata. I think there was no other way to take it at that point. However, I am wondering if we could have given a little more consideration to staying in Fukushima, because we are the Red Cross. I feel a dilemma in having failed to help people.
- The JRCS relief teams withdrew even when there was no evacuation order issued by the authorities both to Shinchi and Soma. Questions still remain about the withdrawal. I don’t think they should have withdrawn. I deeply regret it
- To protect the lives of the relief team members was very important. However, there were still many evacuees at the evacuation centers when they left. I think it was wrong for the JRCS relief teams to have withdrawn leaving the evacuees behind. At the time, it was still unclear how the nuclear accident would turn out. I think that the relief teams should have moved with the evacuees to another area and should have been the last to leave the evacuation centers in case of emergency.

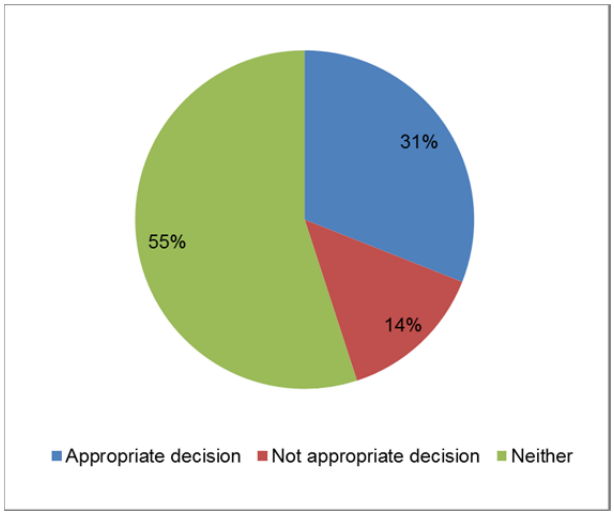
Given the situation and the JRCS rules at the time, it is believed that there was no other option but the withdrawal by the relief teams from other chapters. Very few respondents of the questionnaire replied that the decision on the withdrawal was not appropriate (Chart 20). Withdrawal itself was not a problem in their views. They thought that if relief activities had continued, it would have been necessary to have the correct information and knowledge concerning the radiation disaster, and required protective gear and

equipment in place. The problem was that it took a long time to take action to ensure these things.

Chart 20: Views on the withdrawal by the relief teams dispatched to Fukushima

Question: “At the meeting held at the Fukushima Chapter office on the evening of March 13, it was decided on the de facto withdrawal by the relief teams from other chapters. How do you see it?”

Answers (n=121)



(2) Direct factors of the issues

1) Loss of control for relief activities in the affected area

One of the direct factors of the issues mentioned in the above was that **the relief teams in the affected area became unable to take control of relief activities.** JRCS relief activities are different from those by the Japanese Self-Defense Forces and the Fire Departments which are top-down organizations. The JRCS relief activities are based on on-site decisions and the teams are often flexibly reorganized in an affected area under the leadership of relief personnel with a lot of experience. In fact, the JRCS relief activities were flawlessly provided in the huge disasters in Iwate and Miyagi.

In Fukushima, however, the JRCS relief activities were temporarily discontinued; as a result there were some victims because they were not able to receive treatment. This was mainly caused by the relief teams’ loss of control. They lost control because the nuclear disaster threatened the relief team members’ lives, which was beyond the JRCS expectations. This means that the abilities to flexibly reorganize teams and take action, which is the greatest strength of JRCS relief teams, were harmed and the relief activities failed to be conducted. This is a big problem.

<Comments by the relief team members and the staff of their chapters and hospitals>

- The JRCS relief teams had to consider securing their safety and make a decision to withdraw on their own. Contrary to them, DMAT has a commander who is a physician. DMAT members feel safer because they work under his/her leadership. The JRCS relief teams had no on-site commander as the DMATs have and that may have been a problem.
- A JRCS relief team’s chapter should take on a role like a command center and give orders to

their relief team about where to go each day or to stand-by if the radiation level is high. But it is difficult to take on such a role if we do not have correct information. Many of the relief teams from other chapters went back to their hospitals. There may not have been any other option to take.

- Soon after the nuclear accident, the JRCS HQ was also confused and there were not enough orders from the Shiga Chapter either. They relied very much on our hospital (Japanese Red Cross Nagahama Hospital). The Shiga Chapter gave us only one order, which was "Follow orders from the 4th Block". We got several candidate destinations, but scratched our head about where to dispatch our relief team.

<Comments by the staff and relief team members of the Fukushima Chapter>

- After the nuclear accident, nobody knew anything about the radiation level in each area. We received information from the JRCS relief teams working in the affected area that there were evacuees exposed to radiation. A great fear came over us. We didn't know if the affected area and evacuation centers were safe. It was difficult to decide whether all the evacuees had already undergone contamination screening. Our conclusion at that time was that we were not able to judge where our relief teams could provide relief activities safely.
- I would like the JRCS to support coordinating relief activities on a prefectural and regional level. On a prefectural level, I have seen the JRCS first response teams dispatched to Fukushima shortly after the disaster, but the Fukushima Chapter became much busier once additional relief teams arrived at Fukushima. It seems to me that this resulted in more than one chain of command and the chapter was unable to respond to the relief teams smoothly.

2) Difficulty in ensuring the safety of the relief team members

The control in relief activities in the affected area was lost, **because the assumption of ensuring the safety of the relief team members was threatened**. Three issues emerged from the surveys. First, how should the JRCS cope with both the safety of the relief team members and their relief activities? Second, how should the JRCS secure their relief team members' safety without disturbing the affected people? Lastly, how should the consistency in safety criteria be taken for the JRCS staff between those in the affected area chapter and those dispatched from other chapters?

The first issue: **How should the JRCS cope with both the safety of the relief team members and their relief activities?** This issue was highlighted based on the fact that it was difficult to give orders for conducting relief activities to all members, because some relief team members had a stronger sense of responsibility and others valued their own safety more. This situation negatively affected unity. In the interview survey, many leaders said that they were especially reluctant to give younger members relief activity orders.

<Comments by the relief team members from other chapters>

- I understand that we withdrew from Shinchi to ensure our safety first, because the relief

activities were being conducted without any protective gear/equipment. However, in hindsight, I am not sure whether it was appropriate for us to have left hundreds or thousands of people behind and have not informed them of the explosion at the nuclear power plant.

- There should have been criteria for acceptable radiation exposure level. However, even if there were, the idea of self-sacrifice seems not to match the current times. On the other hand, I can understand that the evacuees in the affected area see us as persons to sacrifice ourselves in working, because we are working as the Red Cross. Should we leave the evacuees behind even if a cumulative dose reaches 1mSv which is our limit dose during relief activities? It will be hard to decide. We withdrew this time, but I think we cannot next time. If we face a similar situation in the future, younger staff would withdraw or stand by in a car.
- If relief team members have to stay in an affected area because it is an order, they would feel that managers giving such orders are not thinking about their safety. The managers should leave the choice of whether to stay or withdraw to the younger staff. Otherwise, I feel sorry for the younger staff.

<Comment by the Fukushima Chapter staff>

- I think that it was obvious for each relief team hospital to have set the radiation exposure limit and the relief teams had no other choice but to return to their hospital by following their hospitals' orders. This experience has made me acknowledge that we cannot engage in relief activities if no decision can be made on whether the environment is safe or dangerous.

The second issue: **How should the JRCS secure the relief team members' safety without disturbing the affected people?** In the nuclear disaster, the relief team members' wearing of protective gear to protect them against radiation was discussed, but a dispute was raised in the discussion, because only the JRCS would protect themselves while the evacuees and local government staff in the affected area were not wearing protective gear. It would have looked strange at the evacuation centers where there were many evacuees wearing casual clothes and the JRCS relief team members were working with protective gear on. Furthermore, that would have given the evacuees unnecessary concerns. However, some JRCS staff said that the JRCS needed to be determined to "ensure the safety of the relief team members" as their top priority so that the members could accomplish their mission and role.

<Comment by the relief team members from other chapters>

- In Fukushima, trainings for relief activities in the event of a nuclear disaster had been conducted even before the nuclear accident occurred. The Fukushima Chapter relief team members said they had been instructed in the trainings to ensure their safety with protective gear on before providing relief activities. In fact, at the meeting held on the evening of March 13, some participants argued for continuing relief activities by wearing protective gear. However, I remember that the JRCS HQ (perhaps) ordered us not to wear protective gear if we had to continue relief activities, because that would only increase concerns among the evacuees who

were staying at the evacuation centers wearing casual clothes.

- I think we didn't have to withdraw if it was possible to provide relief activities with the protective gear on. To secure the safety of the relief team members was necessary. If anything happened to them, the chapter or hospital of the dispatched team would be held responsible. It is impossible to conduct relief activities only with aspirations. I wanted the JRCS HQ to have a system in place to allow the relief team members to provide relief activities to the full extent.

<Comment by the Fukushima Chapter staff>

- We asked the Fukushima Prefectural Government if it would be possible for our relief team members to continue to work with protective gear on. They didn't accept it, saying "the prefectural government staff is conducting body contamination screening for the evacuees without protective gear on and wearing the gear will give the evacuees unnecessary concerns."

The third issue: **How should the consistency in safety criteria be taken for the JRCS staff between those in the affected area chapter and those dispatched from other chapters?** This issue was raised from the staff and relief team members of the Fukushima Chapter in the interview survey. The relief team members from other chapters withdrew from Fukushima by prioritizing their safety. On the other hand, the safety of the staff and relief team members of the Fukushima Chapter or the affected area chapter was considered less important. They expressed their anger against it. They raised a question: There was a double standard in the safety criteria for "JRCS relief teams"; the double standard was taken for granted; and Fukushima was abandoned.

<Comment by the staff of the Fukushima Chapter>

- The JRCS staff of the Fukushima Chapter, Fukushima Red Cross Hospital and Japanese Red Cross Fukushima Blood Center were still continuing relief activities in Fukushima. I am wondering if they shouldn't have been instructed to withdraw. Did the JRCS HQ think about this? The JRCS HQ is now preparing a record report about the relief activities after the earthquake and I read some advice from the ICRC in the draft. One suggestion made me or a resident in Fukushima, feel uncomfortable. The recommendation was: "Rest at night in other prefectures such as Tochigi in order to spend less time in Fukushima." This advice took no consideration of the staff working at the Red Cross organizations located in Fukushima who were continuing relief activities. Do they mean they don't care whatever happens to the staff working at the Fukushima Chapter, the Fukushima Red Cross Hospital and the Japanese Red Cross Fukushima Blood Center? It doesn't make any sense that the JRCS staff in Fukushima and the JRCS relief team members from other chapters weren't equally treated.

(3) Background factors of the issues

1) Lack of information on radiation exposure

As mentioned, the Japanese government provided no details for a while after the nuclear accident

occurred. Therefore, **it was completely unclear whether the radiation level in each region was high or low, or whether there was any health effect from the dosage or not.** As was the case in the past disasters, each JRCS relief team should have put together pieces of on-site information and understood the situation they faced, as well as obtained official information released from the Japanese government or local governments. Then the teams should have reported their information to related JRCS sections so that a chain of information about what was happening in the affected area could be shared within the JRCS. However, during the nuclear disaster, they had to deal with radiation which is invisible. They could not measure the radiation by themselves, as referred to later. Thus the JRCS relief teams were confused on site for a while after the nuclear accident, because they were not able to obtain information from any sources.

As a result, the JRCS was unable to collect enough information to make a decision on the safety of each region or to provide information to their relief teams either. This caused the withdrawal by the relief teams from other chapters.

<Comments by the relief team members from other chapters>

- Nobody understood possible problems caused by the nuclear accident. We had concerns such as “Is there no problem with the air coming from outside through the air conditioner?” Nobody understood possible problems. I understood nobody understood the situation. So, I didn’t even come up with an idea of asking someone about the situation.
- I was concerned about no information coming from anyone about the radiation dosage. If the JRCS HQ or the Fukushima Chapter had provided any such information to us, I think we should have been able to conduct relief activities more secured. We had no problem in relief activities even without information, but a question about our safety during the relief activities still remains.

In the questionnaire survey, the respondents chose the “lack of information” as the most common issue (Chart 21). For the information type they lacked, they chose “Radioactive contamination status in Fukushima” most (Chart 22). The questionnaire results also suggest that the lack of information was one of the background factors for the limited relief activities.

Chart 21: Issues during the relief activities in Fukushima

Question (to those who chose “lack of something” as issues):

What did you feel as issues during the relief activities in Fukushima (n=60) (multiple answers)

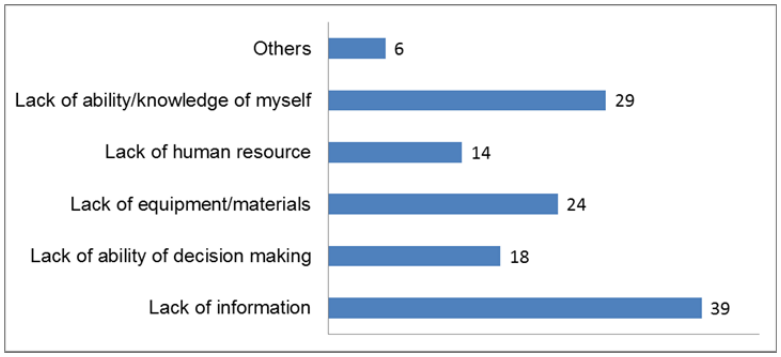
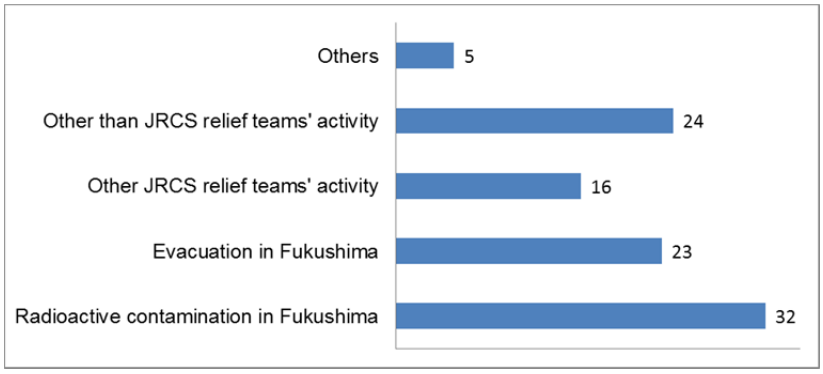


Chart 22: Lack of information during the relief activities in Fukushima

Question (to those who chose “lack of information”): What kind of information did you feel lacked? (n=45) (multiple answers)



2) Lack of equipment and knowledge in the event of nuclear disasters

There was an extreme lack of basic knowledge about radiation both on site and at the JRCS HQ, which unnecessarily increased the sense of fear. This resulted in dissemination of incorrect information. Even though the physicians in the JRCS relief teams had a basic knowledge about radiation, the teams were not able to conduct relief activities safely, because **there was not enough equipment to prevent secondary radiation exposure or dosimeters to measure radiation level** and **no radiation criteria which allowed the relief teams to engage in relief activities**.

In the first place, it had been assumed that nuclear disasters would not occur in Japan. Therefore, there was very little preparation for such disasters. Still, the JRCS Hiroshima and Nagasaki Chapters, Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital and Japanese Red Cross Nagasaki Genbaku Hospital have medical personnel with good knowledge about radiation medicine. If this human network of the JRCS was utilized, the basic knowledge and equipment against radiation would have been easily provided. However, the advantages were not fully used during the first response phase because of the confusions in the affected area.

<Comments by the relief team members from other chapters and the staff of their hospitals>

- If we knew the necessity of having equipment to cope with a nuclear accident before leaving our hospital, we might have been better prepared. However, the reality was that we had no preparations or adequate advanced knowledge regarding this disaster. After the second explosion, we just put on mask or gloves or avoided going outdoors, even though we had no knowledge of radiation.
- To respond to this disaster, information and knowledge were needed. The relief teams from hospitals in the prefectures where a nuclear power plant is located brought a Geiger counter with them, but we did not.
- I think that the Fukushima Chapter did not take an appropriate action to respond to the nuclear disaster. I believe Hiroshima and Nagasaki had knowledge and information about radiation. So, I think the Fukushima Chapter should have collected information from them.
- Our team has nine members, of whom four members had received NBC (nuclear, biological, chemical) disaster trainings and had knowledge about radiation. They knew that it was possible to conduct relief activities if far away from a nuclear accident site, but we did not have any protective gear or survey meters. Under the circumstances, there was no way to conduct our relief activities. We could have continued relief activities if there was some equipment which we could use. At the time, it was unknown how many evacuees had been exposed to how much radiation and where they had been exposed. In addition, we had no protective gear against radiation. In such situation, it was difficult for us to provide relief activities. If we had dosimeters, we would have been able to measure the radiation for objective data and decide on safety.
- When the nuclear accident occurred, the JRCS relief teams had no equipment such as dosimeters. Even if we had some, it was unlikely that we could use them, because we had not been trained about how to use such meters. In fact, Relief Team 2 didn't understand fully how to use a dosimeter or the meaning of the unit shown on the dosimeter. They were concerned about the increasing radiation values on the dosimeter. So, they made a decision: "It's hard to conduct relief activities in Fukushima."

<Comments by the staff and relief team member of the Fukushima Chapter >

- The decision of withdrawal was forced to be made, because the anxiety of the relief team members dispatched from other chapters couldn't be eliminated. After a while, a system was in place in which radiation specialists were dispatched to Fukushima and protective gear and equipment were prepared. It seems to me that we could have taken a different action if the system was established before the nuclear disaster.

<Comment by the coordinator>

- With regard to withdrawal itself, I think that using imaginations matters for what is going to happen with the people to be left behind. The JRCS can use it as a lesson from the experience.

On the other hand, some clear criteria are necessary for decision-making on withdrawal. Otherwise, it is difficult to make a decision.

3) Structural issues of the JRCS

Furthermore, it can be said that **the nuclear disaster revealed the JRCS' weak systematic response to unexpected situations.** Until the disaster, even when the JRCS relief teams faced some confusion or hardship during their relief activities, they overcame them by taking advantage of their experience, knowhow and their ability to take quick on-site actions. When there was something that JRCS relief teams could not fully respond to, they solved it by asking their chapters or Block representative chapters for instructions.

However, all the decision-making functions of the JRCS failed to work due to the following complicated factors:

- The disaster affected a wide area over more than one prefecture
- A nuclear disaster, which was an invisible disaster, occurred after the earthquake
- There was a lack of equipment and knowledge against/about radiation
- For the above reasons, no one in the JRCS was able to decide on whether or not it was safe for the relief team members to continue their relief activities in Fukushima.

There have been various opinions within the JRCS on how the situation should have been addressed such as: "The JRCS HQ should have led the situation," and "The Fukushima Chapter should have taken on leadership." However, it would be far from reality for the chain of command for every possible emergency to be decided in advance. Instead, it is important for the JRCS to steadily prepare for possible emergencies to avoid another functional failure by establishing the role and mission of JRCS relief teams and minimum safety criteria which allow the JRCS to judge on what the teams should do in case of emergency.

<Comments by the relief team members from other chapters and the staff of their hospitals>

- The command structure of the JRCS is much less clear than that of DMAT. The relationship between the JRCS chapters and the JRCS HQ is unclear too. The JRCS HQ coordinates relief activities but does not supervise them. Effectively, the directions for relief activities and the role of each JRCS relief team are determined by communication on site between the team physicians using a mailing list for JRCS relief team physicians.
- The confusion was much larger than after the Mid Niigata Prefecture Earthquake. The chain of command was also confused and the orders repeatedly changed. That was my impression. So, I wanted the chain of command to be clarified. Under those circumstances, the JRCS HQ was also confused and not able to make a decision because they had to consider both securing the safety of the relief team members and supporting the affected area.
- If the JRCS HQ had given orders to us, I think we would have been able to provide more relief activities. I heard the JRCS HQ also had no information and could not give any orders. However, I wanted the JRCS HQ to take action for information gathering by sending an advance team

soon after the earthquake to the affected area or collecting information from the government and then to decide on how each relief team should respond in the affected area.

- It was unclear who would give us orders and take the final responsibility. We were confused. I suppose the JRCS HQ was also confused, but I think they were supposed to have given orders to the relief teams.
- The Shiga Chapter told us that they would leave issuing orders to their JRCS Block representative chapter. The Shiga Chapter thought that each JRCS chapter needed to follow orders from the Block representative chapter. But the Shiga Chapter itself should have given orders to us in my view. Neither the JRCS HQ nor the Shiga Chapter shared information with us or gave orders. Three to four days after the earthquake occurred, we began to contact the JRCS HQ. I remember we never received any orders from the JRCS HQ until our withdrawal was determined. The JRCS HQ's role in a disaster is just to back up relief activities and JRCS relief teams only have to make decisions by themselves to respond to on-site situation. That is the reality.

<Comment by the JRCS HQ staff>

- A major principle of disaster medicine is that relief team members should defend themselves and stay away from hazards. So, I think that the decision on the withdrawal was made based on this principle and there was no other option. However, that decision was about relief activities in a nuclear disaster, which was a very important decision. The JRCS HQ left the important decision-making to a chapter in the affected area. I think that was because there was confusion in the chain of command at the JRCS Disaster Response Headquarters.

-Overall structural issue-

The roles of other organizations as well as the JRCS in a disaster medical care scenario were unclear and there was a lack of information and supplies. This overall structural issue is also included in the background factors. In such a huge disaster, a smooth collaboration with different organizations including the Japan Self-Defense Forces, the fire departments and DMAT should be a must, but it cannot be denied that there was a lack of preparations in this regard.

DMAT had received trainings for NBC (nuclear, biological, chemical) disasters. The Self-Defense Forces provided body contamination screening for the evacuees after the nuclear disaster. The JRCS relief teams were probably required to share information and roles in relief activities with these organizations. However, the disaster affected a much wider area than expected and there was a lack of information about radiation. This made the information sharing for Fukushima about "what is being done by whom and where" much more complicated than for Miyagi and Iwate and that led to the difficult situation.

<Comments by the relief team members from other chapters>

- JRCS relief teams and JRCS DMATs were supposed to have conducted relief activities by

cooperation with the Ministry of Health, Labour and Welfare and by receiving orders from the ministry. However, we received neither information nor clear orders from the ministry. The prime minister's office might have had less expectation for use of DMATs. DMAT is a temporary organization, not a permanent one and its chain of command needs to be created on an ad hoc basis. In addition to that, their structure for sharing information and giving orders is very weak. The on-site information was not fully reported to relevant people and sections.

- In the past, DMATs worked very hard for 24 hours after a disaster occurred and then JRCS relief teams came in to the affected area for relief activities. While the JRCS teams were working hard, relief teams came from other organizations. There used to be such a flow. The role that each organization should take in each phase was clear. However, things are different now. JRCS relief teams are organized much earlier than before and some of them arrive at an affected area and start relief activities even faster than DMATs. This means there are some redundancies in relief activities between DMATs and JRCS relief teams.
- At the moment, it is difficult for JRCS relief teams to conduct body contamination screening. It was possible for DMAT to provide the screening, because DMAT has teams for NBC (nuclear, biological, chemical) disasters. I think there should be cooperation so that the JRCS and DMAT can take advantage of each other's strong points and cover for each other's weak points. If the JRCS does not work on measures against radiation independently, so collaboration with DMAT is essential.

<Comment by the coordinator>

- It is necessary to have a system for the infrastructures established by the National Hospital Organization, DMAT and the JRCS to be utilized by all medical relief personnel.

(4) Supportive factors for the relief activities during the period

During this period, there were various difficulties and hardships. Still, **the first response activities were provided by the JRCS relief teams dispatched mainly from other chapters.** As mentioned, **the relief teams' abilities to take quick action on site were fulfilled during their relief activities.** To be more specific, an informal human network among the Japanese Red Cross hospitals' physicians and a flexible team formation taken on site made the quick actions possible.

The informal human network among the Japanese Red Cross hospitals' physicians means that the relief team physicians who had got acquainted with one another at the JRCS or DMAT training workshops communicated with each other about what was going on and exchanged information by their private mobile phones and managed to understand the on-site confusion to continue their relief activities. As for the flexible team formation, for example, the DMATs switched to JRCS relief teams after checking the medical needs in the affected area. Another example is when the relief teams from different hospitals needed to be divided into teams: teams to go out for gathering information or to wait at an evacuation center, each team had members from different hospitals. They did not stick to their original hospitals. As a result, relief activities were provided for the evacuees, although there were not enough human resources

and information.

<Comments by the relief team members from other chapters and the staff of their chapters/hospitals>

- We were the first relief teams dispatched to the affected area and wanted to check what was going on. So, we divided the relief team members from Nagaoka Red Cross Hospital, Japanese Red Cross Medical Center and Yokohama City Minato Red Cross Hospital into three teams with members from different hospitals. We sent each team to the evacuation centers to gather information and provide mobile clinic services.
- I was able to get additional on-site information by communicating with the physicians whom I had already known when I had participated in DMAT training workshops. The informal human network among the physicians was very useful in the affected area. If physicians know each other and have a relationship of mutual trust, they can take action smoothly and quickly in an affected area after receiving orders. From the experience, I learned that building a human relationship on a daily basis is important.
- I was collecting information on my own, through my human network of the JRCS training instructors, about what was going on in the affected area and what other organizations were doing. Our relief teams consisted of members who were able to work proactively and we did not necessarily need information and orders from the JRCS HQ. I think we responded to the situation in cooperation with the Niigata and Fukushima Chapters. Certainly, formal communication letters were sent within the JRCS from the JRCS HQ, but my understanding is that it was quite difficult to get the information in those letters across in the entire JRCS.
- At the moment, the network among the Japanese Red Cross hospitals' physicians or JRCS relief team leaders makes the on-site control of JRCS relief teams possible. Such an independent approach is certainly one of the JRCS strengths. However, there is no prospect for several years later after those physicians or the team leaders retire. Currently, the on-site control of JRCS relief teams is completely left to personal abilities of the team leaders.

I-2 Stagnant period

(1) Relief activities

After the earthquake occurred, the JRCS relief teams started their relief activities in the affected area. However, after the nuclear accident, they temporarily returned to the Fukushima Chapter office and had a meeting on the evening of March 13 to discuss the relief activities under the radiation environment. During the meeting, they asked the JRCS HQ for decision-making on whether the JRCS relief teams in Fukushima should stay or withdraw, but the JRCS HQ could not give them any conclusive decision. As a result, at 19:30 on the same day, the Fukushima Chapter was forced to cancel its request for relief activities in Fukushima made to other JRCS chapters. Therefore, all the relief teams from other JRCS chapters withdrew from Fukushima on March 14. This put relief activities in Fukushima at risk.

After March 14, the Fukushima Chapter and their relief team continued to provide relief activities, but the shortage of human resources due to the discontinued relief team dispatches from other chapters constrained enough medical relief.

1) Enough relief activities were not provided for the evacuees (who might have been exposed to radiation).

After the nuclear accident, the JRCS relief teams withdrew from Fukushima. As a result, the people who fled the area close to the Fukushima Daiichi Nuclear Power Plant to the inland area were temporarily unable to receive medical relief. Shortly after the earthquake occurred, the JRCS relief teams had already started relief activities, but they had to leave the evacuees behind after the nuclear accident when they were about to conduct their relief activities on a full scale. In the interview survey, the relief team members told about their regret on the withdrawal.

Also, the Fukushima Chapter staff expressed their regret about being unable to provide enough medical relief for the evacuees at many evacuation centers.

<Comment by the relief team member from other chapter>

- Time was wasted because the destination was changed several times. So, the time spent on relief activities felt very short. Did we do enough? Weren't we able to do more? Such feelings remained. I am still concerned about how the people in Tamura who we left behind are doing now and I cannot feel a sense of accomplishment for what we did in Fukushima. There was not much need for full medical care, but if we could have stayed longer at the evacuation center we might have been able to do more in terms of providing preventive medicine and psychological care for the evacuees.

<Comment by the staff and relief team member of the Fukushima Chapter>

- There were about 400 evacuation centers set up in Fukushima. Despite that, the dispatches of JRCS relief teams from other chapters were discontinued from March 14 to 18 because of the influence from the nuclear accident. Relief personnel are also humans and we had to care about them as well as the evacuees. We could not force the relief team members to continue relief

activities. We had a dilemma.

- We were supposed to have sent JRCS relief teams to the first aid centers set up in the Hamadori area such as Soma and Iwaki, where there were many evacuees who fled from the tsunami disaster. However, there were not enough JRCS relief teams in Fukushima and we were stretched with providing mobile clinic services at Azuma Gymnasium in the City of Fukushima and Kawahigashi Gymnasium in Aizuwakamatsu.

2) JRCS relief teams were not sent to Fukushima from other chapters.

After the Fukushima Chapter cancelled the request for dispatching of JRCS relief teams to Fukushima, **the relief teams from other chapters went to Iwate and Miyagi instead of Fukushima.** From the internal procedural point of view, the chapters seemed to have prioritized the requests for relief teams from the Iwate and Miyagi Chapters. However, it appeared that the chapters did not want to dispatch their relief teams to Fukushima where the safety of their relief team members could not be guaranteed. **As a result, the Fukushima Chapter and their relief team had to struggle to conduct relief activities on their own.**

<Comment by the relief team member from other chapter>

- After our first response team returned to our hospital, our administrative managers, deputy director general and chief nurses, made negative comments on sending our subsequent relief teams to Fukushima. They raised a question over the dispatch to Fukushima, because they were seeing our nurses weeping from concerns about being sent to Fukushima.

<Comments of the relief team member and the staff of the Fukushima Chapter>

- "You shouldn't go to Fukushima, because the area is contaminated." Such misperception spread to not only to the public but also medical personnel including the JRCS staff. Certainly, some areas in Fukushima were dangerous because the radiation level was high. But other areas were safe with almost the same radiation dosage as usual. I heard that some Director Generals of the Japanese Red Cross hospitals had clearly said: "I won't send our hospital staff to Fukushima." I think such remarks of theirs greatly impacted other Japanese Red Cross hospitals too. Temporarily, the dispatches of JRCS relief teams to Fukushima from other chapters/hospitals were completely discontinued.
- Residents and the Fukushima Chapter staff were in Fukushima and the chapter staff continued to work for relief activities. Despite that, the JRCS relief teams from other prefectures did not come to Fukushima even for two nights and three days per dispatch. As a Red Cross staff member, this was not only emotionally difficult to accept, but also pathetic.

(2) Direct factors of the issues

It was supposed to have been indispensable to continue relief activities in Fukushima based on decisions by the JRCS HQ, each JRCS Block representative chapter or each local chapter after taking necessary actions to respond to the nuclear disaster. However, **either of them was not able to give orders for dispatching of relief teams to Fukushima, because the safety in the area was not confirmed.** Even under the circumstances, the JRCS HQ was in a position to be able to give orders for continually dispatching relief teams, but that did not happen. The interview survey suggested the interviewees' discontent and regret with it.

As was the case in the confusion period, the interviewees told about the dilemma that they could not order their relief teams for relief activities in Fukushima, because the safety of their relief team members was not guaranteed. Particularly, the staff and relief team members of the Fukushima Chapter showed their sympathy towards other chapters and hospitals because they were resigned to the difficulty to send JRCS relief team to Fukushima from other chapters under those circumstances. On the other hand, they cared about their staff and relief team members of the Fukushima Chapter who struggled to continue providing medical relief in Fukushima without support from other chapters.

<Comments of the other chapter staff>

- Many Director Generals of the Japanese Red Cross hospitals showed their reluctance to send their relief teams to the area where the safety of the team members was not guaranteed. Damage from radiation was out of scope of insurance. Any claim for workmen's compensation from radiation would have not been accepted, if anything happened to their staff. They were facing a very difficult situation where some teams had to be sent to Fukushima without any compensation prepared in the event of accident. At the time, the JRCS HQ had yet to decide on directions for relief activities in Fukushima. Even if the Japanese Red Cross hospitals refused to send their relief teams to Fukushima, we only had to accept their decision. The hospitals seemed to try to deal with the issue of radiation, for instance, by setting age limits of members to be dispatched. It was difficult also for the hospitals to order their staff to work in Fukushima if the hospitals could not offer any help to their staff such as taking care of their families during the dispatch. I think that was one of the reasons that forced the hospitals to ask their staff to volunteer as relief team members.

<Comments of the staff and relief team members of the Fukushima Chapter>

- Unlike other disasters, the JRCS HQ should have directly asked JRCS chapters to dispatch their relief teams to Fukushima and coordinate the dispatches. In hindsight, I believe so. I think that the JRCS relief teams were supposed to have worked under the leadership of the JRCS HQ. But at the time soon after the nuclear accident, it was strongly believed that the Fukushima Chapter should respond to the nuclear disaster, because it occurred in Fukushima.
- Many people voiced a concern: "Is Fukushima really safe?" But we, the Fukushima Chapter staff, couldn't evacuate. We couldn't give up our work as the Red Cross. Since there were many

evacuees, I think that all the staff of the Fukushima Chapter was determined not to flee Fukushima. The affected area is not only the area damaged by the tsunami and the area close to the nuclear power plant, but also the entire Fukushima including the area damaged by harmful rumors. There is no question about that.

- I wanted the JRCS HQ to make a decision on how the JRCS as a whole should respond to the relief activities in the nuclear disaster. I regret that the JRCS HQ couldn't give orders even to the Japanese Red Cross Medical Center which was directly overseen by the JRCS HQ.

(3) Background factors of the issues

As was the case in the confusion period, there was still a lack of information about radiation exposure, and lack of equipment and knowledge against/about nuclear disaster during this period. That is the major reason for the issues. As already mentioned, it was revealed in the period that the JRCS which is a huge organization had many resources that could have been used in the nuclear disaster but had no knowhow to appropriately distribute them to their relevant staff. That was one of the background factors of the issues.

(For comments of the relief team members and the staff, see I-1 (3).)

II. Turnaround/Steady period

II - 1. Turnaround period

(1) Relief activities

The dispatch of the relief teams from other chapters were temporarily discontinued, but they resumed on March 15. Relief activities also started again in limited regions in Fukushima. The JRCS Disaster Response Headquarters issued an order not to conduct relief activities within a 30km radius of the nuclear power plant. **That was the JRCS HQ's attitude on how to respond to the nuclear disaster presented to their staff for the first time after the nuclear accident.** Gradually the JRCS relief teams calmed down from the confusion after the nuclear disaster occurred and began to use their ability to take quick action on site, which is one of the JRCS' strengths. At the JRCS HQ, the necessary actions that needed to be done by the JRCS during a nuclear disaster became clear and the JRCS HQ began support for relief activities to resume in Fukushima with assistance from various organizations and specialists.

The JRCS relief teams who started the relief activities during this period received a lecture regarding the damage in the affected area and a basic knowledge about radiation before starting their relief activities in Fukushima. They also brought with them protective gear and equipment to prevent exposure to radiation. These measures eliminated fear and confusion from the relief team members and made it possible for them to provide many relief activities in Fukushima.

<Comments of the relief team members from other chapters and the staff of their chapters and hospitals>

- We had already performed a takeover by phone through the hospital (Yokohama City Minato Red Cross Hospital) that had dispatched our predecessor team. They informed us about which medications we should bring with us. After arriving at the Fukushima Chapter office, we had orientation in which we were given a lecture about radiation then received a dosimeter and watched a video on how to use it. Essential utilities were back on. We were able to obtain information before starting our activities. A radiological technologist, a radiation specialist, was with us. So, I had almost no fear about providing relief activities in Fukushima.
- At the Yamagata Chapter, some of the staff suggested that our relief teams be dispatched to Miyagi instead of Fukushima. However, since many relief teams were leaving Fukushima, I was deeply disturbed by this proposal. When the Three Mile Island accident occurred, the area 80km away from the power plant was said to be safe. Aizuwakamatsu is located 90-100km away from the Fukushima Daiichi Nuclear Power Plant. After some members made a proposal to dispatch our teams to Aizuwakamatsu, we consulted with the Fukushima Chapter about the possibility. Although Aizu was not designated as a Japanese Red Cross relief activity area, the Fukushima Chapter kindly negotiated with the Fukushima Prefectural Government and the Medical Association of Aizu. Thanks to their efforts, the first dispatch of our relief team to Aizuwakamatsu took place from March 18 to 20.
- On March 19, we sent in the first teams from Japanese Red Cross Musashino Hospital and Yamanashi Red Cross Hospital. To continue the dispatch, we arranged a rotation schedule to

send two teams in at a time to the City of Fukushima from the chapters of the 2nd Block.

(2) Direct factors of the issues

1) A systematic control began to take place in relief activities.

The JRCS HQ showed its clear principles for relief activities of the JRCS as a whole. This means that **the JRCS block representative chapters and each chapter obtained the activity criteria**. Then a system was gradually prepared for JRCS relief teams to conduct relief activities without any systematic conflict within the JRCS. In addition, a decision was made to invite a medical expert from the Japanese Red Cross Musashino Hospital to the JRCS Disaster Response HQ as a medical coordinator.

<Comments of the relief team members and the staff from other chapters>

- Basically, I felt we were able to work in Fukushima according to orders from the JRCS HQ. I felt so, probably because it was not soon after the earthquake when I worked in Fukushima. Actually, I didn't know why the JRCS relief teams from other chapters withdrew from Fukushima and that the decisions on the relief teams' relief activities were left to the JRCS chapters and hospitals which had dispatched their teams. My understanding is that the decision making power for relief activities is top-down (from the JRCS HQ to the JRCS chapter, the hospital and then to their relief team on site). I was not aware about the command structure for the dispatch, but I thought the JRCS HQ gave main orders.
- At first, JRCS administrative staff communicated with JRCS physicians in Fukushima to coordinate relief activities. But in reality, it was found to be better and smoother to communicate between the physicians. So, we asked the then Director General of the Japanese Red Cross Musashino Hospital for advice. Following his advice, we arranged to invite one of the physicians at the hospital to the JRCS HQ as a medical coordinator. He was appointed on March 18.

2) A system to secure the safety of JRCS relief team members was put in place.

At the same timing, a system was put in place to distribute necessary equipment and to have medical specialists give advice to relief team members. With this system, **the means for measurement and evaluation of the safety of JRCS relief teams were secured.** This was also a major development. As mentioned more specifically later in (4), JRCS relief team members were able to come to Fukushima without any fear. Thus JRCS relief teams were seamlessly dispatched to Fukushima.

<Comment by the relief team member from other chapter>

- I thought that senior managers of JRCS chapters and hospitals would make a final decision not to send their relief teams to a dangerous area. People were still living in Fukushima and other JRCS relief teams had also conducted relief activities there just before us. So, I departed for Fukushima, thinking that there would not be any danger.

(3) Background factors of the issues

During this period, some factors which made the JRCS relief activities difficult began to be removed, as described in (4) below. For the lack of information about radiation exposure, the Japanese government and the Fukushima prefectural government started to release related information. In addition, the JRCS was able to measure the radiation level in Fukushima using survey meters and other dosimeters.

The lack of equipment and knowledge about protection from the nuclear disaster was the core issue. This was also being resolved, because a system was put in place for JRCS relief team members to receive advices from radiation specialists, and dosimeters and screening devices were provided. The JRCS prepared its safety criteria for relief activities in a nuclear disaster. With these measures, a system was established for JRCS relief teams to engage in relief activities in Fukushima without fear.

(4) Supportive factors for the relief activities during the period

1) The Fukushima Prefecture Radiation Emergency Medicine Coordination Headquarters provided expertise and offered the JRCS the use of their rules in relief activities under a radiation environment.

On March 19, the JRCS Disaster Response HQ notified within the JRCS that JRCS relief teams were able to ask the Fukushima Prefecture Radiation Emergency Medicine Coordination Headquarters for information about specific safety measures for medical relief activities in Fukushima and that advices can be also received directly from the specialists at the headquarters. In addition to this action, the JRCS Disaster Response HQ began to ask for support from the Japanese Red Cross Hospital physicians who are knowledgeable about radiation emergency medicine.

With these actions taken by the JRCS HQ, a system was established which allowed JRCS relief team members arriving at Fukushima to receive support and lectures about radiation from specialists.

<Comments of the staff of other chapters and hospitals>

- To take measures against radiation, our chapter contacted the JRCS Disaster Response HQ to ask for arrangement to dispatch radiation specialists to Fukushima from the Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital and the Japanese Red Cross Nagasaki Genbaku Hospital. Then physicians were sent to Fukushima from the Japanese Red Cross Nagasaki Genbaku Hospital and the lecture center was set up there to establish a system so that JRCS relief team members could be given a lecture before starting relief activities in Fukushima. Before this system was prepared, we had asked a physician from the National Disaster Medical Center who worked at the Fukushima Prefecture Radiation Emergency Medicine Coordination Headquarters at that time to give lectures about relief activities under a radiation environment. He accepted our request and our relief teams received lectures from him. The lectures were coordinated by a physician appointed as a medical coordinator at the JRCS HQ. At first, the coordinator didn't know who was coordinating the JRCS relief activities in Fukushima as a medical key person. So, he coordinated the lectures through one of the Fukushima Chapter staff.

2) Necessary equipment (dosimeters, protective suit, etc.) was provided.

Dosimeters and other equipment were prepared to ensure the safety of JRCS relief teams during their relief activities. **This allowed the relief team members to control their safety**, which was a major background factor. The Fukushima Chapter did not only wait for the equipment to be distributed by the JRCS HQ but **the chapter actively procured some of the equipment on their own as well.**

<Comment by the staff of the Fukushima Chapter>

- In addition to the dosimeters which the JRCS HQ provided for us, the Fukushima Chapter purchased dosimeters for our staff by themselves. Using the dosimeters, we logged the radiation dose data and sent it to the JRCS HQ. The cumulative dose already exceeded 3mSv for some of our staff. As we logged the data, we were able to identify the locations where the doses were high or low. This was very helpful for our work. For instance, one of our staff lived in the area with high radiation level and spent time in the area also on weekends. The cumulative dose of that staff was found to be quite high from the dosimeter values. Until the procurement of dosimeters, we didn't have any objective data on radiation level. We continued to let our staff record data. By doing so, our staff was able to check the safety of their area on their own and work in Fukushima without fear.

II – 2. Steady period

(1) Relief activities

On March 22, the JRCS Disaster Response HQ sent an internal letter concerning the JRCS relief teams' destinations for dispatching. The letter said that the JRCS HQ would not assign any specific JRCS block as the only block to send JRCS relief teams to Fukushima and all blocks can send their teams to Fukushima. In the letter, the following conditions were clearly defined for dispatching a relief team to Fukushima: (1) Whenever possible, relief teams should be accompanied by a radiological technologist; (2) Experts should be dispatched to Fukushima from the Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital, and the Japanese Red Cross Nagasaki Genbaku Hospital to ensure that information and advice could be given to the relief teams on safety measures during relief activities; (3) Dosimeters, protective gear and medications should always be in place in Fukushima.

In this letter, the JRCS HQ effectively expressed their support for relief activities in Fukushima. This letter determined the JRCS relief activities to be conducted in Fukushima on a continued basis. (No limited assignment of any JRCS block meant that each chapter was able to spontaneously dispatch their relief teams to Fukushima. However, despite the intention, only a small number of relief teams were sent to Fukushima.) In mid-end of March, the confusion was finally settled and relief activities started to be conducted smoothly.

Later on, from May 22, the JRCS as a whole started to participate in medical relief in the temporary re-entry program for the evacuees who had fled the restricted area. When the program began, only the Fukushima Chapter responded to the relief activities. However, as the program scale got larger, it became difficult for the Fukushima Chapter to be the only one responding the program. For this reason, the JRCS Disaster Response HQ started to coordinate the JRCS relief team dispatches for the program.

- During the disaster, no JRCS block was assigned as a specific block to dispatch relief teams to Fukushima. This meant the Fukushima Chapter had to ask each chapter directly for relief teams. The Fukushima Chapter manager in charge seemed to have made great efforts to make sure that relief teams were sent to Fukushima. I think the JRCS HQ should have taken on the management role for relief team coordination in accordance with the Red Cross spirit.

(2) Direct factors of the issues

The system which had started to be put in place in the turnaround period was stabilized during this period. JRCS relief teams were sent on a continual basis, when required. The establishment of a system for lectures about radiation and how to use dosimeters significantly contributed to the stable situation. The details of the points are mentioned in (4) below.

(3) Background factors of the issues

As was the case during the turnaround period, the background factors were reduced as referred to in (4) below. At the same time, the JRCS' structural issue was also addressed. As a result, the relief activities were accomplished on a steady basis.

(4) Supportive factors for the relief activities during the period

1) Radiation emergency medical advisors were dispatched and stayed in Fukushima

From March 19, a system was gradually established to obtain knowledge concerning radiation from specialists. The letter dated March 22 established this system. This system greatly relieved the Fukushima Chapter, because it allowed the chapter to take the necessary consideration in requesting other chapters to send their relief teams to Fukushima.

<Comments by the radiation emergency medical advisors>

- The JRCS relief teams which were dispatched to Fukushima soon after the earthquake asked the JRCS HQ for help, but the JRCS HQ couldn't take action either. So, if dosimeters were provided to the relief teams and a lecture on radiation was given to them, which was an ad hoc response to the situation, the members might be able to provide relief activities. The JRCS HQ thought so and took action. They tried to do their best under the circumstances after the nuclear accident. I think the JRCS HQ and the Fukushima Chapter made the right decision.
- Due to a lack of knowledge about radiation, some of the JRCS relief personnel working in Fukushima at that time said that they did not want to see patients evacuated from areas with high radiation dosages. I was dispatched to Fukushima to enable the staff to conduct relief activities without fear. That is my understanding of the purpose of my dispatch.

<Comments by the relief team member and staff of the Fukushima Chapter>

- The JRCS relief teams began to feel secure in conducting relief activities, when they received dosimeters and could get the visible radiation values by measuring them.
- Physicians and radiological technologists came to Fukushima from the Hiroshima Red Cross Hospital & Atomic-Bomb Survivors Hospital and the Japanese Red Cross Nagasaki Genbaku Hospital. They gave us a lecture on radiation, explaining to us that the atomic bomb explosions and the nuclear accident in Fukushima were different. I think this lecture helped calm us.

2) Protective equipment (dosimeters, protective suits, clothes, etc.) began to be always put in place.

The letter on March 22 said that radiation specialists should be dispatched, and stay in Fukushima. The letter also clearly stated that protective gear and equipment should always be put in place. The relief teams began to measure radiation levels using the dosimeters and to better ensure their safety.

<Comment by the radiation emergency medical advisor>

- Some of the relief team members to be dispatched to Fukushima were young women and they voiced concerns about radiation exposure. That is why the JRCS prepared the personal dosimeters. We brought the dosimeters to Fukushima to keep logs on radiation exposure of the relief team members and to get them to feel secure while working. On the evening of March 18, we visited the JRCS HQ, and then went to Fukushima with the Executive Director General of the Operations Sector to deliver the personal dosimeters, which had arrived at the JRCS

Headquarters. In the car travelling to Fukushima, we set the dosimeters for the team members in advance. On March 22, we arrived at Fukushima with 100 dosimeters.

＜Comment by the staff of the Fukushima Chapter>

- We received dosimeters on March 26. That led to our reassurance too. I felt receiving knowledge about radiation as well as the measurement devices was very important, because this enabled us to understand the meaning of the doses measured.

3) Guidance on the basic understanding concerning radiation, and how to use the equipment were given.

To avoid the possibility of the relief team members not understanding how to read the radiation dosages after they receive dosimeters, a system was established to provide a basic knowledge as well. Finally, the JRCS was able to make a long-term relief activity plan. While the temporary re-entry program was implemented, the JRCS relief teams were dispatched without any problem.

<Comment by the radiation emergency medical advisor>

- On March 22 or 23, the JRCS HQ telephoned me and asked for some radiation medical specialists, because the JRCS was going to set up a response headquarters at the Fukushima Chapter. In response to the call from the JRCS HQ, we gave lectures about radiation and how to use a dosimeter to the JRCS relief team members in Fukushima. The dosimeters we brought to Fukushima were offered by the International Committee of the Red Cross (ICRC). The dispatched radiological technologists were very familiar with health effects from radiation and gave lectures about what kind of symptoms could develop in case of radiation exposure.

<Comment by the staff of the Fukushima Chapter>

- Especially, the guidance given by specialists from the Japanese Red Cross Nagasaki Genbaku Hospital and the Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital helped very much to reassure the relief team members that were conducting relief activities. The JRCS was asked to provide relief activities for the evacuees during their temporary re-entry to the restricted area and continued to engage in the relief activities for about one year. It has a great meaning to us.

3. Evaluation of “Guidelines for Relief Activities under Nuclear Disasters” and future challenges

Two interview surveys were conducted simultaneously, the one regarding the experiences and views on relief activities during the nuclear disaster and another regarding “Guidelines for Relief Activities under Nuclear Disasters” (May 2013 Version) which was established after the disaster.

As mentioned in the previous section, the JRCS relief activities were interrupted only in Fukushima after the Great East Japan Earthquake since the safety of the relief team members could not be guaranteed. The main reason for this interruption was the lack of equipment and knowledge about nuclear disasters along with no criteria for relief activities during a nuclear disaster.

Therefore, the following course of action for the relief activities was clearly presented in the guidelines as the criteria to conduct relief activities in the event of a nuclear disaster.

> In the event of a nuclear disaster, the Japanese Red Cross Society will conduct the relief activities outside of the area restricted by the national/local authorities, as long as cumulative doses of radiation do not exceed 1 mSv during the activities.

In addition to the code of conduct which includes 7 items, the guidelines also mention: radiation emergency medical advisor, response by radiation emergency hospitals, education and trainings for JRCS relief teams, and basic knowledge about radiation.

(1) Importance of the guidelines and the dose limit

Although the guidelines are important, the respondents of the survey also expressed the necessity of allowing JRCS relief teams to make some decisions on site. In particular, the respondents were concerned that setting the dose limit may force JRCS relief teams to follow it. More specifically, the respondents understood the necessity of the guidelines as criteria for decision-making, but were concerned about possible harmful results by strictly following the guidelines.

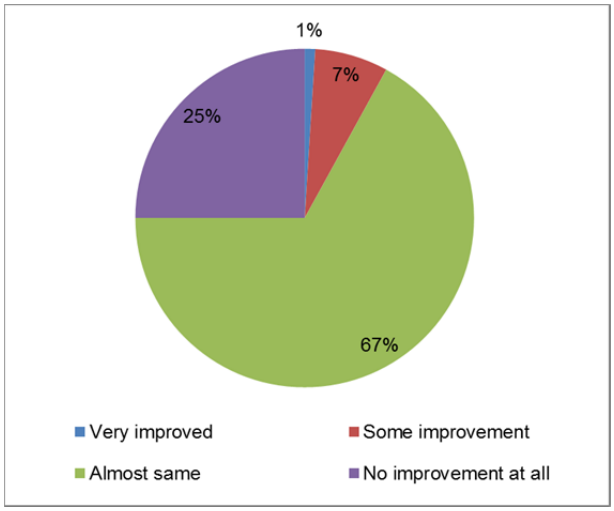
<Comments by the respondents>

- It is nice to have guidelines or criteria, but it is impossible to set rules in advance for every possible scenario. I think it better to allow some decisions to be made by relief teams on site.
- For the dose limit, a certain level of range may need to be set. In an affected area, it is difficult to refuse patients based on their level of radiation.
- If relief teams are ordered to stay in a nuclear disaster area, it would be perceived that managers who give the order don’t care about team safety. The rules should allow younger members to choose to stay or withdraw.
- Guidelines are just guidelines. They may not be helpful depending on specific situations. Relief team members may find that the equipment prepared according to the guidelines is not sufficient for the situation. They may need to enhance their ability to be flexible in any situation.

In the questionnaire survey about the established guidelines, a question was asked regarding whether the relief activities after the nuclear disaster would have been improved if the JRCS relief teams had been provided the guidelines. The results show that many of the respondents thought the activities would have been improved (Chart 23). These results provided a level of evaluation to the establishment of the guidelines. Furthermore, it suggests that the guidelines will be helpful for the JRCS activities in the future.

Chart 23: Usefulness of "Guidelines for Relief Activities under Nuclear Disasters"

Question: "If you had been provided the guidelines at the time, would the relief activities have been improved? (n=112)



Regarding the appropriateness of the dose limit of "1mSv", the respondents hoped the limit would be reviewed including who the limit should be applied to and how wide the scope of the activities should be. Most of the physicians who responded to the questionnaire thought that the limit of 1mSv was low. Some respondents pointed out that the guidelines imply "relief teams from other chapters" as those who the dose limit should be applied to. Furthermore, some respondents stated that radiation levels along with their corresponding health risks needed to be included in the guidelines.

The survey results show that it is necessary to have more discussions on the dose limit by assuming more situations which the JRCS relief personnel could face.

<Comments by the respondents>

- The cumulative radiation exposure limit dosage for medical personnel is regulated as 50mSv per year. The dose limit of 1mSv in the guideline is too low in my impression.
- I sort of understand the limit of 1mSv, but I am not sure about it. We need a dose limit which allows us to make a decision on site about whether to stay or withdraw.
- I am not sure about whether the dose limit is high or low. I am concerned more about health risks rather than the limit itself. So, I think it would help us if there is some information in the guidelines, like "At xx mSv, there could be health effects such as: xxxx." In addition, blood distribution would be a problem in relief activities under a nuclear disaster. We would have to

distribute blood even to hospitals within an evacuation-prepared area if patients need blood. In such a case, there would be a problem with how the safety criteria should be established for JRCS staff to distribute blood to hospitals in that area.

- JRCS relief teams will definitely include childbearing age women. The Japanese Red Cross hospitals have to think about how they should select their relief team members. They may need to decide to pick up female members by age. There may be discussions about age limit also for male members. However, if a relief team consists mainly of older members, the on-site relief activities may be hampered. It is difficult to have an age limit when forming a relief team.

(2) Necessity of trainings using the guidelines

Many respondents pointed out that the importance of using the guidelines in trainings and verifying if the criteria or procedures in the guidelines are valid. They also mentioned that the guidelines should be used in a way that would draw the attention of relief team members (including where to put the guidelines) on a day-to-day basis. These attentions would make the guidelines more effective in the case of emergency.

From their experiences in the nuclear disaster, some of the respondents suggested that area-specific disaster countermeasures should be implemented in each area in case of unexpected disasters. It was further suggested that the JRCS should take the lead for the implementations.

<Comments by the respondents>

- The guidelines would have helped us if they had been prepared before the earthquake. I appreciate the guidelines. However, the guidelines need to be verified not only by the Fukushima Chapter but also by the entire JRCS to see whether the instructions in the guidelines are really correct and effective. The guidelines should be used in training workshops at each Japanese Red Cross hospital and facilities.
- If the guidelines are not effective, relief team members would be reluctant to go even if he/she is ordered to be sent to a nuclear disaster area. Evidence or specific figures need to be shown in the guidelines so that JRCS relief personnel can decide on whether to continue their relief activities. Otherwise, the guidelines will not be effective.
- I think the JRCS chapters in prefectures close to prefectures with a nuclear power plant, if not all JRCS chapters, should implement training workshops and drills in case of a nuclear disaster. Simulation trainings are important. As for supplies and equipment, each Japanese Red Cross hospital and facilities has to decide on specific items and the quantities and actually prepare them.
- I want to see the copies of the guidelines provided also at ER and doctor's offices. If it is not possible, I want the copies to be distributed at least to the JRCS staff who received trainings for NBC disasters. If that is not the case, there will be no meaning in the establishment of the guidelines.
- A relief team drill takes place once a year in each JRCS block. However, most of the participants

in the drill will not remember well what to do in relief activities, because it is held just once a year. The drill should not be just a routine one. It would be helpful, for instance, if a JRCS chapter or a prefectural government office of a prefecture with a nuclear power plant could take a responsibility to arrange an opportunity to give a lecture about expertise to relief teams in the drill and emergencies as well.

- Disaster types vary from area to area. I have a doubt about whether trainings for nuclear disasters should be implemented in all prefectures. For example, a volcano eruption is a more urgent matter than a nuclear disaster in prefectures without a nuclear power plant. I think that JRCS chapters and hospitals located in those prefectures need to prepare measures against possible health problems from an eruption such as volcanic ash problem in accordance with a disaster prevention plan issued by the prefectural governments. Also, it is important for those chapters and Japanese Red Cross hospitals to get ready to give lectures about such health problems to other JRCS relief teams, in case they are dispatched to their prefectures from other chapters for support.

Chapter IV: Summary and Recommendations

For “disaster relief activities”, there is no detailed scenario, although a rough strategy or story may exist as the basis for the activities. Rather, if such a scenario is set in advance, there could be a risk that relief activities are bound by the scenario. Once a disaster occurs, relief teams are required to flexibly respond to the disaster under unclear circumstances by flexibly using a slight amount of information obtained and their resources prepared in advance. Therefore, the relief team members need to have the ability to work actively and autonomously, be able to cooperate flexibly with other people, and a sort of wide range of intelligence. They have to be able to find where they are needed in an affected area which is in chaos. Through twists and turns, they need to continue to provide relief activities for affected people by collaborating with other people[1]. By doing the practice over and over in the same manner and then repeating it in other affected areas, an order and a sense of reassurance will be created among people. This is one of important aspects in relief activities. This is also the core capability of the Japanese Red Cross Society (JRCS) and has been their organizational culture.

The JRCS can show this unique capability when they are faced with an uncertain situation. One of the examples can be seen in relief activities in an earthquake disaster. The JRCS has many experiences which they can refer to when they start to conduct relief activities after an earthquake occurs, but JRCS relief teams have no knowledge or information on geography and damage in the affected area in which they are dispatched to soon after the earthquake. The scope and content of the relief activities are not clear to them yet. To some extent they can imagine how they should act but have to check the details of the situation while providing relief activities in the affected area. In other words, they know there are variables but are not able to find any values of each variable in this situation.

So, how can the JRCS act when they face a structural uncertainty? It is difficult for the JRCS to deal with this situation with only their unique abilities (e.g. to be scattered and work autonomously). A structural uncertainty means a situation in which variables themselves are unknown and there is uncertainty about what JRCS relief team members should pay attention to or take into account in their relief activities. In this situation, there is no rough story which the relief team members who are supposed to be scattered (like wildfires) and work autonomously should rely on. Therefore; the JRCS’ strength mentioned above does not work. If the relief teams face a structural uncertainty, “someone” needs to write a “rough story” first, which could then be a foundation of each member’s autonomous activities. Furthermore, the story needs a sort of reality to it. In other words, the story should be accepted by stakeholders involved in the relief activities.

The nuclear disaster in Fukushima was nothing other than a structural uncertainty for the JRCS. As many of the JRCS staff admits, the disaster was “completely beyond their expectations.” As mentioned in Chapter 3, after being faced with a structural uncertainty, the organizational activities of the JRCS

[1] There are some researchers who call the JRCS’ activities to be scattered and work autonomously “wildfire activities” and give a high evaluation to the JRCS’ unique abilities to learn and practice: Ueno, Naoki, “Object-Centered Sociality and Forms of Exchange in Wildfire Activities”, *The Japanese Journal of Development Psychology* 22(4); Engeström, Yrjö, “Wildfire Activities: New Patterns of Mobility and Learning”, *International Journal of Mobile and Blended Learning*; Yamazumi, Katsuhiro, and Engeström Yrjö, ed., *Knotworking*.

went through the periods: from the “Confusion Period” to the “Stagnant Period”, to the “Turnaround Period” and then the “Steady Period”. They were confused by the sudden situation in which they were not able to respond with their traditional rules and mechanisms. Therefore, their activities were stalled. For the JRCS who had not prepared for nuclear disasters, it was an inevitable consequence. After they faced the confusion, the JRCS started preparing ad hoc rules to respond to the extraordinary circumstances. In making the rules, they referred to external sources such as the Japanese government and the ICRC as important references. This means that the JRCS could not independently make new rules. Even if they could, reality to the rules would not have been given to the rules. As the rules were understood and accepted by the relief personnel and staff, the JRCS relief activities were gradually stabilized. Then the JRCS was able to develop their specific relief activities by showing their original ability of working actively and autonomously.

That is the outline of how the JRCS responded to the nuclear disaster. Below is the brief summary including the JRI’s comment.

1. The nuclear disaster that occurred in Fukushima was completely beyond the expectations for the JRCS, as was the case for the government and Tokyo Electric Power Company. Therefore, in a way, the JRCS inevitably faced the unexpected situation. However, a question still remains: Was there not an opportunity for the JRCS to learn from the experiences of the Chernobyl and the Three Mile Island accidents as they are part of the worldwide Red Cross? From our expectations to the Red Cross, which is a specific organization, positively speaking, they could have taken on the difficult role to provide a wake-up call for a Japanese society about what seems to have been overlooked in this case.

2. Next is the evaluation about the way the JRCS responded to an “unexpected situation”. As was referred to, the point is writing of “a rough story” to cope with the structural uncertainty. However, it is believed that there was something more that the JRCS HQ could have done. In other words, the JRCS HQ could have gathered the JRCS’ knowledge to write “a rough story” or to prepare “the JRCS’ principles” to respond to the nuclear accident. To be more specific, it is believed that they could have called the physicians and radiological technologists to the JRCS HQ immediately from the Japanese Red Cross Nagasaki Genbaku Hospital and the Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital which have a lot of expertise to discuss major principles as the JRCS by collaborating with the relief teams in Fukushima. The JRCS HQ’s attitude was rather passive in the JRI’s impression.

3. After the JRCS HQ established its principles for relief activities on March 22, the JRCS was able to utilize their unique capabilities and make JRCS specific contributions. The JRCS supported its relief teams in Fukushima by dispatching radiation medical specialists and also assisted the temporary re-entry program by providing relief activities to the evacuees. The JRCS’ organizational capabilities and specialties accomplished their activities which were

appreciated by the communities in the affected area.

The JRI's recommendations for future JRCS relief activities are as follows:

1. No excessive psychological burden should not be placed on relief personnel.

   The interview survey revealed that there are some people who still regret the withdrawal from Fukushima. That might have been a heartbreaking experience for them between the JRCS mission and the fear that they faced. Each member's strong sense of responsibility made them feel so. It was not a good idea to make the relief personnel think that they made "an agonizing decision which was apparently inconsistent with the JRCS mission". It is necessary to take measures for relief team members to feel that the JRCS as a whole will take the role of making stressful decisions in a clear way.

2. The JRCS should not be a "heavy" organization.

   The JRCS as a whole should take the role of making stressful decisions. That said, if this harms the JRCS' advantages (e.g. to work autonomously), they will turn to disadvantages. It is better to leave well enough alone. The right way is not to focus too much on the "beyond-the-expectation" experience and try to prepare versatile directions or guidelines to respond to various kinds of situation and make strict rules in taking a systematic approach in case of emergencies to cover the weakness of JRCS' chain of command.

   The JRCS regretted that there was not enough communication within the JRCS, for instance, between the JRCS HQ and chapters during the nuclear disaster. However, it is also questionable whether the JRCS should focus on establishing common perceptions by making detailed communication rules in case of disasters including nuclear disasters among the staff. This effort for a close relationship among the staff even with good intentions could lead to "an adverse effect and prevent flexible quick actions from taking in case of emergencies". It takes a large amount of time and effort until an agreement is established within an organization. Adverse effects from such a "heavy organization[2]" will be more serious than expected.

3. The ability to respond to "unexpected disasters" should be improved.

   However, the JRCS cannot continue to list unexpected disasters including nuclear disasters as unexpected any more. Thorough simulations of assumable situations will help JRCS relief personnel to improve their abilities to quickly respond to emergencies. Particularly, for nuclear disasters, the JRCS should make use of the lessons learned from the disaster to develop their training method.

   On the other hand, the organizational abilities need to be improved with the assumption that "unexpected" situation will occur ever even if whatever assumptions are made in advance. In this regard, a concept of organizational learning is helpful. In order to become a "learning

2 Numagami, Tsuyoshi, et al., *Organizational Weight* (Nikkei Inc.)

organization" capable to respond to unexpected situations, it is desirable to ensure three conditions advocated by Prof. David A. Garvin at the Harvard Business School and other researchers: (1) psychological safety; (2) appreciation of differences; (3) openness to new ideas.

Furthermore, the JRCS should build an organizational plan to pass the experience of the disaster in Fukushima on to the next generation, share it with them and repeat "dialogues" with them. What needs to be heeded in sharing the experiences is "to tell them a story instead of logic". Details are cut in a process of summarizing into logic, but details are most important in sharing the experience in Fukushima. The way of storytelling is the approach to convey the entire experience.

4. Mutual cooperation with other organizations should be strengthened.

It is desirable to go beyond working autonomously and strengthen cooperation with other organizations such as the Japanese government and other Red Cross National Societies. If a nuclear disaster occurs, the JRCS will definitely need to work in cooperation with the Japanese Self-Defense Forces and other organizations. The JRCS should develop such a cooperation model together with the Japanese government and local governments of areas with a nuclear power plant.

5. The JRCS needs to ask itself a question: "What is the Red Cross"".

In the survey, some people raised a question: "Should the Red Cross withdraw because it is a nuclear disaster? The nuclear disaster in Fukushima gave them another opportunity to think about the question: "What is the Red Cross?" but the answer is still unclear. The JRCS relief personnel and staff are still asking themselves this question. They should not escape easily from this "hard and agonizing effort" of continuing to think about the question. If they abandon it and only give a simple and easy-to-understand conclusion that the decision made at the time was right or wrong, it would be regrettable. It is certainly stressful to face this complicated experience again, because the experience was very difficult to understand. However, the relief personnel and staff should not escape from the stress but share the "agonizing effort" and repeat "dialogues" within the JRCS for further considerations. They should aim in this direction. Throughout the process, they will repeatedly face the question: "What is the Red Cross?" Probably, this is a never-ending question. Rather, they should not think that there is an end to asking this question. (They should stop thinking that they understand it from a superficial slogan.) This is a never-ending question. An answer will not be given to them from someone else, either. The JRCS and its relief personnel and staff who experienced the disaster in Fukushima should think that they need to find the answer by themselves by reflecting on the experience and looking towards the JRCS future activities.

End of the report.